

Overcoming Insomnia

~Everyone Became Sound Sleep from Sleeplessness~

5102 Ando Yumina

Abstract

Insomnia affects both mind and body and increases the risk of various diseases. In addition, there is a possibility of economic loss due to a decrease in work efficiency during the day and negative thinking. Based on these things and the fact that we spend about one-third of our life on sleeping, I thought that there was great significance in improving insomnia. The conclusion is to eliminate insomnia-promoting and permanent factors. Specifically, stress countermeasures, lifestyle changes, and appropriate treatment are necessary. So, I thought about how to disseminate this information and thought that spreading World Sleep Day would be a good idea. Last year, artists who are active around the world created music that is said to be good for insomnia, and distributed it on various music services. The awareness of World Sleep Day is low, and I don't think it has reached people with insomnia, so I thought it would be good to first let people know about the existence of World Sleep Day.

1 Introduction

Insomnia can affect anyone in the world, and sleep deprivation can have devastating physical and psychological effects. A lot of research has been done on insomnia, and countermeasures have been discovered, but what is effective for people who don't actually have a sense of crisis about insomnia or who don't know the importance of sleep? Sleep disorders are familiar to us, and we spend a third of our lives sleeping, so I think it's worth researching. In addition, insomnia has significant disadvantages, such as reduced efficiency in work and study, and negative psychological effects. I think the economic loss due to insomnia is quite large. Insomnia has also been found to increase the risk of a variety of other illnesses. Insomnia is a disease that can affect anyone in the world, and it is not well known, so I think it is of great significance to investigate ways to improve it. Finally, we propose an effective improvement method for insomnia.

2 Discussion and implications

First, I research Insomnia. Insomnia means you regularly have problems with sleeping.

It usually gets better by changing your sleeping habits. Insomnia can sap not only your energy level and mood but also your health, work performance and quality of life. It's usually the result of stress or a traumatic event. Insomnia may be the primary problem, or it may be associated with other medical conditions or medications.

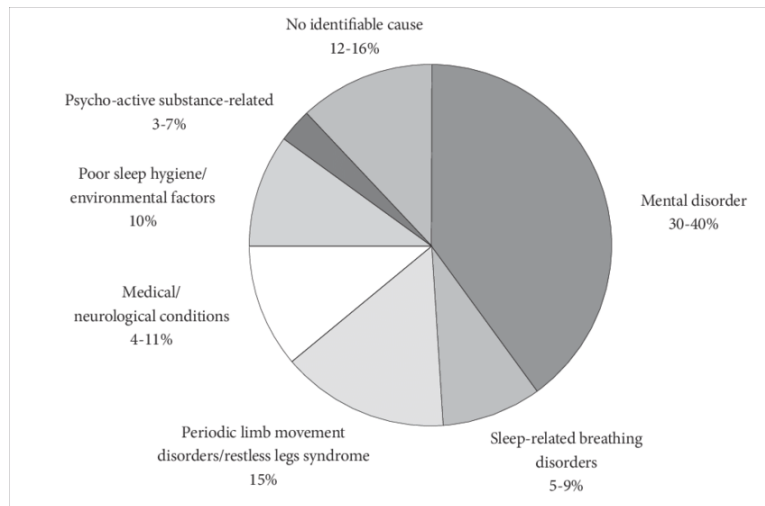


Figure1 cause of insomnia

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Insomnia refers to the accumulation of physical and mental fatigue due to difficulty falling asleep, awakening in the middle of the night, early morning awakening, and difficulty falling asleep for more than one month, leading to a state of depression such as malaise and decreased motivation. If insomnia continues, you will not be able to sleep well, so you will not be able to get rid of fatigue, and you will not have the energy to get up in the morning. In addition, if the daytime sleepiness remains strong, the efficiency of work that requires attention and memory is reduced, and the mood tends to be depressed. On the other hand, they tend to be overreacting to little things, hypersensitive to interpersonal relationships, and easily irritable. Furthermore, it is becoming clear that during sleep, growth hormone is secreted, immunity is strengthened, body tissues are repaired, and information and memories during the day are organized and established. When this happens, these functions become inadequate, and it is thought that physical disorders are more likely to occur.

When anyone feels stress, the activity of the sympathetic nerve increases, and if one becomes excited, it becomes difficult to fall asleep. The susceptibility to the effects of stress varies from person to person, and this is called the "prerequisites" in Spielman's 3P model. Addition of stress and environmental changes strengthens the "promoting factors" in Spielman's 3P model, and when a certain limit is exceeded, "insomnia" develops. At this stage, many

stress-related insomnias can be improved by reducing the "promoting factors" through appropriate stress management, adjustment of lifestyle and sleeping environment, and appropriate drug therapy.

In this way, what I need to improve corona insomnia to solve the problem is the "promoting factor." In previous research, I found an attempt that says "20 artists from all over the world gathered to commemorate "World Sleep Day" ! In previous research Healing songs that bring a good night's sleep are now available for distribution! "There is an effort to make an annual call to action on how important healthy sleep is for humans. Internationally enacted, it aims to raise awareness of the physical and mental health benefits of good sleep habits. Recently, it has been reported that the number of people suffering from insomnia has increased rapidly due to the pandemic that hit the world (BBC News named the phenomenon "Corona Somnia "). is significant. According to the World Sleep Association, 2 billion people worldwide suffer from insomnia. Studies have shown that listening to music while sleeping can help people fall asleep faster and improve sleep quality. Also, in order to prevent recurrence, it is necessary to improve the "permanence factor".

3 Conclusion

We found that insomnia can be improved by eliminating promoting and permanence factors. It is necessary to reduce stress and improve internal rhythms. To that end, I learned that music is effective, and that it is important to devise meals, do light exercise, and create an environment for sleeping. I'm not a doctor, so I can't directly tell patients about these things, so I'd like to promote World Sleep Day instead. I would like to emphasize the importance of sleep by presenting data that overturns the stereotypes of people who take sleep lightly, and that the recognition rate for World Sleep Day is low.

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20 artists from all over the world gather to commemorate "World Sleep Day"! Healing songs that bring a good night's sleep are now available for distribution!

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Bringing Thai Professional Soccer to the World

~Thai League 1 to become a symbol of Thailand's development~

5103 Haruki Izawa

Abstract

I conducted our research with the goal of developing the Kingdom of Thailand, a developing country in Southeast Asia. As a means to achieve this goal, I focused on the J-League, which can take advantage of its community-based activities, and the MLS, which has a solid structure as a sports business. Specifically, I wanted to solve regional issues in Thailand through the J-League's regional contribution activities. In the course of our research, I found that Thailand had been hit hard economically by the COVID-19, which has caused a series of factory shutdowns in the country, because the manufacturing industry is the main industry. Therefore, I studied the issues facing the J-League itself, the league structure of the MLS, and the external strategies of European leagues such as the English Premier League. I therefore decided that the first and most important step was to improve not only the level of soccer, but also the structure of the Thai league itself. I also thought that the further development of the Thai League 1 would increase the amount of what we could do for Thailand.

1 Introduction

Thailand, the subject of this study, has seen a great increase in the popularity of soccer in recent years, and although it is not globally popular or well-known, it is characterized by having a solid league. Therefore, I thought it would be easy to conduct this research, which is to promote the development of Southeast Asia through professional soccer, and that the results would show up immediately when they were achieved. In this research, I would like to take advantage of the J-League's regional focus, which I have been referring to since last year. In addition, thinking about the Thai league, I believe that the league structure known as the "single-entity system," which has become a hot topic in the professional sports world in recent years, can be successfully utilized. I would like to consider the optimal league structure for Thailand, referring to the Major League Soccer (MLS), an American professional soccer league that was one of the first in the world to introduce the "single-entity

system," so that it can make a significant contribution to the development of the country.

2 Discussion and implications

The goal of this study is to make Thai Ligue 1 such an important part of Thailand that it becomes a symbol of the country's development. If this can be achieved, we can help develop Southeast Asia from the perspective of professional soccer, a region that is currently underdeveloped.

First of all, professional soccer can have a positive impact on society by becoming a tourism resource and by contributing to national and regional economies. As an example, consider the English Premier League, the best league in the world. The Premier League attracts star players from all over the world, and the soccer matches are played at a very high level. As a result, it has fans all over the world, and its influence is not limited to the United Kingdom. Since many people want to watch the games live in local stadiums, soccer has become a tourism resource, attracting tourists from all over the world and contributing to the local community. In addition, the market for these clubs is very large, as their merchandise and other products are sold all over the world. Even if it is difficult for Thai professional soccer to become like England, it can be transformed into a bigger soccer league by turning its vision overseas.

The J-League, Japan's professional soccer league, also has a way for the Thai league to develop in the future. The J-League, from its inception, has aimed to be a soccer league rooted in the local community, and in recent years, due in part to its influence, it has also developed a system to solve social problems in the local community. One of the strengths of the J-League is that it is able to solve problems not only through the J-League itself, but also through partnerships with local governments and general companies. This is a very good approach, as it provides a clear means of solving problems and increases the influence on the local community.

Another league that can be used as a reference is Major League Soccer (MLS). This league uses a unique league structure called the single-entity system, which is a recent trend in the sports business world. The purpose of this system is to eliminate as much as possible the disparity between clubs and to achieve development of the league as a whole. In this way, the attractiveness of the league itself is enhanced. If the league becomes a league with too much disparity in ability, even if the economic situation of individual clubs improves, the lower-ranked clubs will have a hard time running their businesses and will not be able to

continue to exist. If the number of teams were to decrease as a result, the league would cease to exist. In order to prevent such a situation from occurring, the system is tried to be designed to align the teams, both financially and in terms of strength. Another advantage of this system is that it makes it easier for investors to invest in the leagues and clubs, since the risk of bankruptcy is now extremely small. The United States is at the forefront of the sports business, and the system devised there makes the league an attractive investment target. Fund-raising will be a very important point for the future growth of the Thai league, and we believe that it is better to introduce this single-entity system in order to actively receive investment from a large number of people.

3 Conclusion

The popularity of soccer in Thailand has been growing year by year, and it is not difficult to see that interest in the country's domestic league is growing in this context. However, it is necessary to devise ways to make this not a transient boom, but to further develop it into a development for the country of Thailand itself. Part of this is to expand overseas, or to contribute to the local community within one's own country.

However, when considering gaining popularity overseas, Thailand alone does not have a sufficient track record. In this case, we would like to refer to the example of Major League Soccer (MLS), a domestic soccer league in the U.S., which has succeeded in marketing itself not only domestically but also overseas by viewing sports from a business perspective. The U.S. is a country with a very advanced sports business, and there are many aspects of sports other than soccer that can serve as a great reference. In particular, the MLS, which was established around the same time as the J-League, has drastically changed the United States, which had been said to be a soccer barren land. Thanks in part to the MLS, soccer has become the second most popular sport in the U.S. after the NFL and NBA, the four major sports in the country. The MLS is a unique league in terms of its structure and other factors, but it has been very profitable in the U.S. because it is suited to the realities of the U.S. and has had a strong external strategy. I believe that there are many clues for the development of leagues hidden in these examples of activities and league rules, and I would like to continue my research on them in the future.

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Education First to children around the world

~New ways to use second hand textbook and youth in action~

5104 Juna Ishii

Abstract

Looking around the world, the educational disparity among children has long been a problem, yet the educational environment in developed countries is only getting more developed, while the educational environment in developing countries is not being resolved. Even today, according to UNICEF, still 330 million children can't go to school and receive enough quality education. Therefore, my research focused on creating opportunities for Japanese youth to think about social and poverty issues that are occurring around the world. For example, the reuse of textbooks. There are many problems in Japan, especially university textbooks, which are too expensive and economically difficult to buy. The most effective idea at the moment is a flea market website dedicated to textbooks, which is already in use in some other countries. However, simply sending the textbooks to developing countries is not sure how the textbooks are actually being used locally, so a volunteer group of students interested in social issues could collect and deliver the textbooks to children who can't get enough education. A problem is the impression people have of second-hand items in Japan, and whether there are many textbooks that are relatively close to new ones, which are original when they are used.

1 Introduction

Currently, so many children around the world are not receiving high quality education, especially developing countries(FIG1), and there are large educational disparities among countries. However, this is not because children do not like to be educated, but because children are often deprived of educational opportunities by the region in which they were born and by their parents. There are many families where there are no schools, the number of teachers are not enough, or economically they have to work from a young age to bring money into the family. In fact, when I went to Cebu, Philippines in July this year as part of my volunteer activities to support refugee camps in slum areas, I met elementary and junior high school students whose houses were destroyed by typhoons and who could not go to school due to the effects of Covid-19 and their families' poverty situation. There were also many children living in large families in shabby-looking huts. In addition, while English education in the country as a whole is development, in some parts of the country, English education at

home and at school is not extremely advanced, and while there are many people who generally live in English, in some parts of the country, not only children but also adults cannot speak English, and I actually felt that there are disparities in education even in the same region. There are economic reasons for not being able to go to school. There are also those whose parents are financially unable to send them to school, those affected by typhoons and other natural disasters, and even those for whom there are no schools in some areas. The purpose of this project is to focus on what we can do for them, as a developed country, to help these children receive a good education, and thereby create an opportunity for us, the youth, to think about the global poverty gap. While the level of education in developed countries is rising rapidly, education in developing countries has not been going in the right direction for many years, and the global education gap seems to be growing wider and wider. It is necessary for each of us to think about how our actions can help the world as a whole move in the right direction. This is why I am considering a charity in which developed countries students support developing countries students. There have been many support activities for developing countries already, but I think that the reuse of textbooks and student activities may be new. I would like to focus mainly on the student activity part of this suggestion. The actual research will be through the use of my survey, observation of the situation by visiting these kinds of places and the Internet.

2 Discussion and implications

My suggestion is to create groups of student volunteers who collect textbooks. They sell used textbooks and call for donations of them as everything, and then actually go to developing regions themselves to distribute these textbooks. In Japan, used products are still not common and many people are still prejudiced against these ideas, but I am particularly interested in the idea of promoting textbook used-sale flea markets, mainly online. In fact, textbooks are too expensive in Japan, especially for university textbooks. In addition to the high cost of tuition, textbooks are also a major expense. Moreover, there is the problem of textbooks being disposed of after graduation instead of being recycled. Some people think it is lazy to separate garbage and go to the recycle shop. While solving such problems in Japan, used textbooks can be sold in Japan as material support for children in developing countries who lack access to education, with those that can be used as is (e.g., English) and those with language barriers sold for charity or new relief supplies. The profits are then donated to charity or to new relief supplies. Since the number of people who will see the textbooks on the website will be limited, we are also considering selling used textbooks at events where

many people come to the school, such as open campuses and entrance ceremonies, if possible. If we are not able to collect and hand them over ourselves in such activities, we will not know how they are being used or if they are being used for purposes other than our own. Many university students who find free time and are interested in volunteering can be found easily through volunteer application sites such as "activo". According to our own survey, about 80% of students discard their textbooks after graduation or give them to someone they know (FIG2). About 90% said they would like to use a textbook flea market site or service if one existed. One way to donate them is to have them collectively donate the items they no longer need at graduation ceremonies and other such events. By doing so, wasteful individual discards would be reduced, and students would be able to respond to the excessive prices of textbooks at Japanese universities and other institutions. By using the rewards for the donation, the company expects to eliminate unnecessary expenses and losses. The idea of buying textbooks as used books is not something that many people think of, especially when everyone usually buys new ones every school year changes. We hope to make a new idea there, and hope that buying used books will be a step toward eliminating educational disparities around the world, and will help young people learn about and become interested in the world's poverty disparities. Recently, many people, regardless of age, have become interested in environmental and social issues such as recycling and educational disparities with developing countries, and recently these issues have been covered by the media. We hope that we can gather students who are interested and make this a student-centered activity.

3 Conclusion

The last goal is the one described in this Discussion and implications, but there are still many problems, the more you use textbooks, which have writing, markers, and other originality, the more they become, used ones are difficult to use like new ones, and public activities are difficult. While it is difficult to resell items with a lot of writing, there are many textbooks and reference books that have not been used much and have few writings. Such items would be easy to sell at a relatively high price. Since it is not easy to use the materials used in Japan as they are overseas, we think it is more realistic to sell them as used in Japan and use the profits overseas. We also think that setting a suggested donation amount at the time of purchase would also be useful. Therefore, in relation to the SDGs development goals of eliminating poverty and inequality, this study focuses on the educational disparity between developed and developing countries, and by targeting young people in their teens and twenties by mainstreaming used textbooks in Japan and providing learning support for

children whose education is not enough to them. We believe that this will create an opportunity for people to learn about the existence of poverty disparities in the world and to think about social issues that they would not otherwise know about because they live in Japan, a developed country.

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FIG1

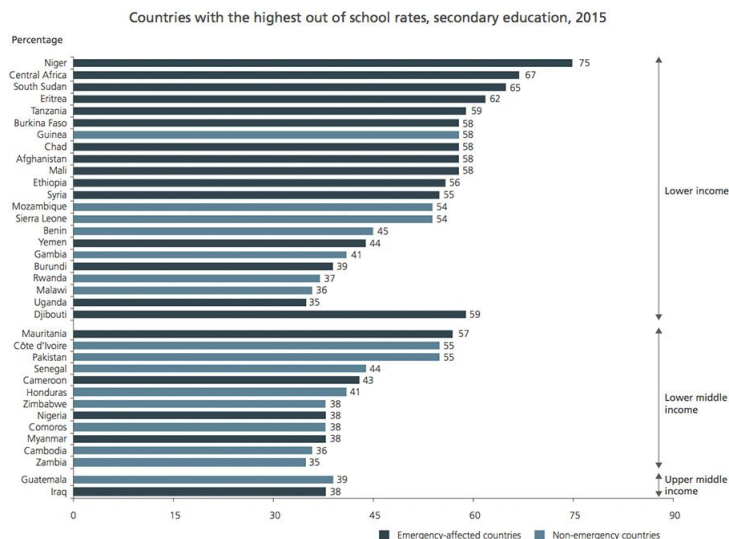
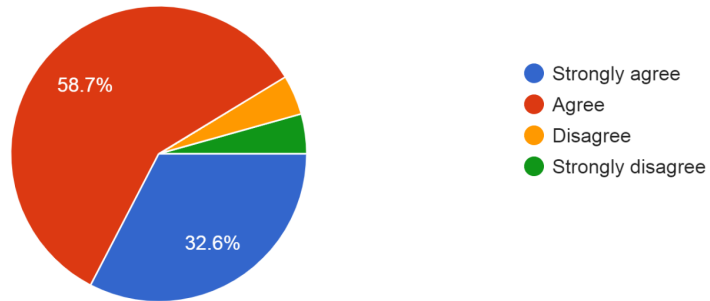


FIG2

If there is a service that picks up textbooks, would you like to use it?



Stop the hunger in Democratic Republic of Timor-Leste Because of the poverty

~spread the goat bank system~

5105 Ryoko Ishimaki

Abstract

I suggest that Timor-Leste adapts the goatbank system to make a active business to reduce poverty and to reduce hunger in the country. This system is sustainable and self-standing so If they adapt it they will be able to earn enough money to live by themselves. What is more, The popularity of meat of goat is increasing so it has the ability of trading with other country or area.

1 Introduction

At present 40% of the population of the Tiomor-Leate are forced to live with less 1\$ per a day and the hunger become a serious problem. The economic gap between urban area and rural area is very large and the poverty rate and the hunger rate is almost in proportion. Therefore I think the cause of the poverty is the economic stagnation so I research about how The rural area of The country can adapt the lively economic activity.

2 Discussion and implications

The climate and landforms of Timor-Leste are characterized by mountains covering approximately 60% of the country and has a large amount of open land in the western part of the country. It has dry and rainy seasons, and there is also a dry season. In terms of agriculture and livestock production, there is a shortage of farmland, small-scale production, and the absence of business owners.

This is why I am considering the introduction of a goat banking system. In the goat banking system, the supporter lends a few livestock animals (in this case, two or three goats) to each household, the household raises and breeds the animals, and after a few years, returns the number of animals which they borrowed to the donor. This system, which provides livestock farming as a means of earning cash income, is already in use in Vietnam, Laos, and other countries. In Laos, cash income has increased by adapting the goat banking system, and in some cases, the profits have amounted to one-third of the annual cost of living. However, the scale of this activity was small, and the results were more about increasing the income of each household than the village or the country as a whole.

The benefits of this system are that it is sustainable and self-sustaining. The advantage of this system is that it is highly sustainable and self-sustaining. Although support in the form of aid money and food is necessary, it is ultimately difficult for developing countries to break away from their dependence on developed countries. The reason why goats were used in the study was because goats are one of the livestock animals that are resistant to drought and have very high fertility, which is the most suitable for the dry climate of East Timor, which has a dry season. In addition, goat meat and goat milk have been attracting increasing interest in recent years because of their health benefits, and goat meat exports from Australia have doubled in the past five years (1), so they thought they could earn income from goat meat trade as well.

One of the challenges of this system is that it is very small in scale. The target unit is the "household," which does not lead to economic growth in villages, towns, prefectures, or the nation as a whole. Since my goal is to revitalize economic activity in rural areas as a whole, I recommended that the scope of my research be limited to "villages. To address the first issue, the shortage of farmland, I recommended that vacant land be utilized, especially in the western part of the village, and in other areas, that breeding facilities be secured by either constructing barns for several families at a time, or by constructing barns on residential land that are large enough for each family to keep 10 or more cows. The second issue, the scale of production, can also be solved by using "villages" rather than "individual households" as the unit of production. Specifically, each household will be responsible for raising the animals, but shipments will be organized into "village" units. Although the economic disparity between urban and rural areas is noticeable, the company believes that it is difficult to make profits from domestic trade, and aims to acquire profits from trade by exporting to other countries. The third issue is the absence of a business owner, so an organizational framework will be created in advance and local people will be hired. This will enable us to secure business owners and at the same time increase employment.

Next, we discuss specific proposals. Introduce a goat banking system in rural areas of Timor-Leste to generate income through trade with foreign countries, especially developed countries, instead of aiming for cash income in the domestic market. The reason for not using the system in the domestic market is that we believe that trade within an economically marginalized region will not lead to significant income. Let us assume trade with Japan. Japan's imports of goat meat in 2021 amounted to 467 tons, of which 95.6% came from Australia and 4.4% from Spain. Figure (2). At 476 tons per year, this translates to about 38 tons per month. The average amount of edible parts obtained from one goat is said to be about 18 kg. In addition, Australia exports 443 tons per year, making a profit of 420.8 million. A simple calculation shows that the profit per kilogram

is about 950 yen, which means that one goat (18 kg) yields a profit of 17,100 yen. In addition, after processing, 5 kg of goat meat is sold for about 15,000 yen (1kg x 5p of commercial-use goat cut meat for Okiham, 14,880 yen), so adding processing to the price can generate a profit of 45,000 yen per goat. Even if we assume that 10 families in a village each ship one goat per month, the village as a whole can earn 450,000 yen in cash income.

3 Conclusion

The proposal is for several households in the region to jointly use a corral to activate livestock production, especially goat production, and to develop trade with foreign countries by sending local business owners or hiring local caretakers. In this proposal, there are still issues of trade costs and trading countries, as well as profit-sharing methods.

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Aiming for ZERO-WASTE

~Creating a livable of environment~

5106 Mikoto Isobe

Abstract

Zero-waste is not about how to dispose of waste, but a society that does not generate waste itself. It is an effort to live with purpose. Today, the world's garbage problem is progressing year by year, but Kamikatsu town, Katsuura-district, Tokushima prefecture is the first in Japan to tackle zero-waste. We are conducting activities to separate 45 pieces of garbage that are not used by individuals. This activity has actually achieved a recycling rate of over 80% in Kamikatsu town. Last year, I researched Kamikatsu town's initiatives and tried to spread zero-waste from there. However, this is an initiative that can only be done in a small town with a small population, and it would be difficult to do it in a big city. Therefore, we need to look for zero-waste that can be tackled on a global scale.

1 Introduction

The garbage problem is a major problem facing the world. garbage continues to grow. Much of this waste is not properly disposed of, causing pollution and health hazards in various places as a pile of garbage. It is estimated that by 2050 there will be more plastic than fish in the ocean. There are also problems with recycling. Recycling consumes a lot of energy, but about 80% of the garbage we produce in Japan is incinerated or landfilled without even being recycled. However, it is a big problem that landfill sites are decreasing year by year. New landfills require suitable land, which is difficult to find. In addition, the current situation is that it is not easy to solve the impact of landfills on the surrounding environment, such as the damage to health and crops due to harmful substances, and the impact on rivers and ecosystems. There are many problems associated with garbage disposal. Therefore, the research question is "Is it possible to solve the world's waste problem with zero-waste?" By doing so, we aim to solve the garbage problem. At the same time, we will conduct research with the aim of solving the environmental problems caused by the waste problem. The significance of this research is that by proposing measures to reduce the amount of garbage

that continues to increase and to protect the earth's limited resources, we can not only solve the garbage problem, but also solve environmental problems. .

As a research method, I use the Internet to deepen my knowledge of the world's garbage problem. The content of the research mainly focuses on what kind of waste problems exist in the world (types and contents), and what efforts each country is making to solve the problem of waste, which is currently regarded as a problem in many countries. such as whether or not at the same time, I look for initiatives that are likely to lead to solutions to the world's garbage problems. Next, learn about the efforts at the “Kamikatsu Zero Waste Center” in Kamikatsu Town, Katsuura District, Tokushima Prefecture. In 2003, Kamikatsu became the first town in Japan to make a “Zero Waste Declaration”, and is a region that has set a target of 2020 to become “Zero Waste” (minimizing the amount of waste that must be incinerated or landfilled). Instead of using garbage trucks, Kamikatsu has adopted a “resources bring-in” system in which residents separate their garbage and bring it to the facility themselves. Also, I learned that Kamikatsu town had established a hotel called “HOTTE WHY” in the same location as the Zero Waste Center, so I actually contacted the Zero Waste Center in Kamikatsu town and made the Zero Waste declaration. Hear about the details of the efforts in Kamikatsu town, including the reasons for establishing HOTEL WHY. After that, I will think about how to spread Kamikatsu's efforts to the world based on the information I got from the Zero Waste Center. Ultimately, we will make proposals that can solve the waste problem while comparing various efforts that are being made around the world. The proposal will make Kamikatsu's efforts world-class.

2 Discussion and implications

The current world population is approximately 7,676,960,000. The total amount of garbage thrown away by people living in various parts of the world is about 2.12 billion tons per year, and this figure is on the rise. The progress of the garbage problem also affects the shortage of landfill sites and the deterioration of the global environment. While conducting research to solve this problem, I focused on the “Zero Waste Center” in Kamikatsu town, Katsuura district, Tokushima prefecture, and the adjoining “HOTEL WHY”. The town of Kamikatsu has made a zero-waste declaration and has adopted a system in which the townspeople take their own garbage to the zero-waste center instead of using garbage trucks. Its recycling rate is as high as 80%. Food waste is said to account for a large portion of the total amount of garbage, but all households in Kamikatsu dispose of food waste themselves.

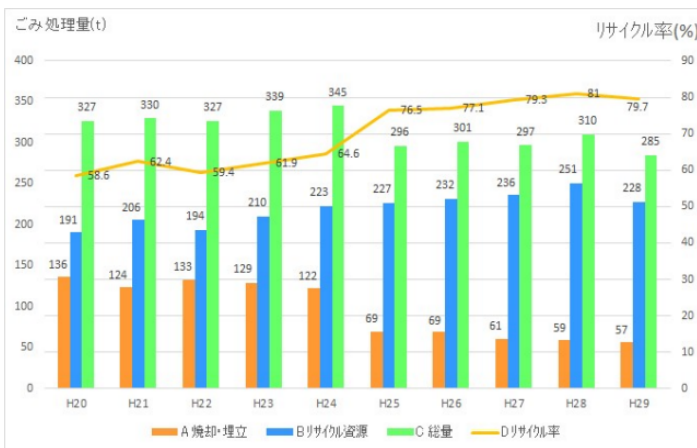
From these facts, it can be seen that the people living in Kamikatsu are actively cooperating with the Zero Waste Declaration. In fact, from the point of view of the townspeople, sorting is not troublesome, and rather, sorting seems to be a matter of course. Currently, there are problems with incinerating garbage in the world, but Kamikatsu has introduced 45 sorting of garbage in order to reduce the cost of incinerating garbage. By separating 45 wastes, the annual incineration cost per person, which costs 14,000 yen nationwide, has been reduced to 9,076 yen. For these reasons, I thought that if we could spread the efforts of Kamikatsu town to the rest of the world, we could come closer to solving the world's waste problem.



上勝町資源分別表

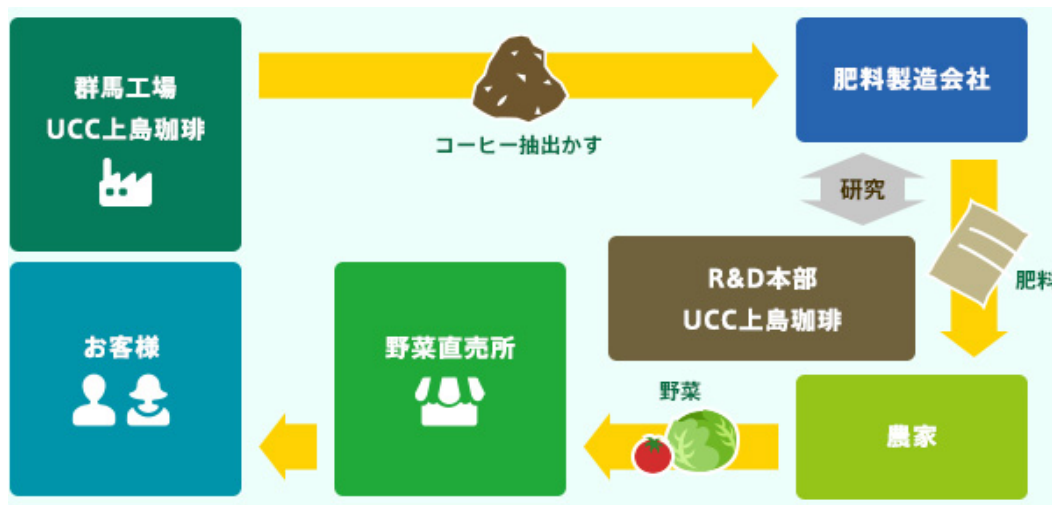
- 分ければ資源、混ぜればごみ -

① まだ使える物 ↓ くまのショップへ	② 生ごみ ↓ 自宅で堆肥化	③-1 アルミ缶 ↓ アルミ製品	③-2 スチール缶 ↓ 鉄鋼製品	③-3 スプレー缶 ↓ 鉄鋼製品	③-4 金属製 キャップ ↓ アルミ製品 鉄鋼製品	③-5 雑金属 ↓ 金属製品
④-1 新聞 ↓ 新聞用紙	④-2 チラシ ↓ 段ボール	④-3 雑紙・雑紙 ↓ 再生紙	④-4 紙パック(牛乳) ↓ 再生紙	④-5 紙パック(ジュース) ↓ 再生紙	④-6 紙パック(紙) ↓ 再生紙	④-7 破いた紙 ↓ 段ボール
④-8 シュレッダー紙 ↓ 再生紙	④-9 その他の紙 ↓ 固形燃料	⑤-1 衣類・帽子 ↓ 中古販売 ウエス	⑤-2 その他の布類 ↓ 固形燃料	⑥-1 割り箸 ↓ 固形燃料	⑥-2 プラスチック ↓ 固形燃料	⑦-1 プラスチック 容器・包装 ↓ 製鉄所の還元剤
⑦-2 プラスチック 容器・包装 ↓ 固形燃料	⑦-3 白トレイ ↓ 白トレイ	⑦-4 トイ以外の 発泡スチロール ↓ 固形燃料	⑦-5 ペットボトル ↓ 衣類	⑦-6 プラスチック製 キャップ ↓ 製鉄所の還元剤	⑧-1 透明びん ↓ 透明びん	⑧-2 茶色びん ↓ 茶色びん
⑧-3 その他の びん ↓ びん	⑧-4 一升びん ↓ リユース	⑨-1 陶磁器類 ↓ 陶磁器類	⑨-2 鏡・水銀 ↓ 水銀	⑨-3 電球・蛍光灯 ↓ 水銀 ガラス製品	⑨-4 乾電池 ↓ 鉄鋼製品	⑨-5 廃バッテリー ↓ 鉛
⑩-6 ライター ↓ 鉄鋼製品	⑩-1 粗大ゴミ ↓ 金属	⑩-2 粗大ゴミ ↓ 固形燃料	⑩-3 粗大ゴミ ↓ 固形燃料	⑩-4 粗大ゴミ ↓ 焼却処理	⑩-1 粗大ゴミ ↓ 焼却処理	⑩-2 粗大ゴミ ↓ 焼却処理
⑪ びん・缶 ↓ 埋立処理	⑫-1 廃タイヤ ↓ 固形燃料	⑫-2 その他 ↓ 各メーカーにて リサイクル	日ヶ谷ごみステーション 7:30~14:00 TEL:050-3438-8110 上野目町 年々増加する粗大ゴミ・資源物の回収、また *缶・びん・ペットボトル・白トレイ・割り箸、プラスチック容器包装は洗浄して、乾かしてからごみステーションに持ち込んでください。 *粗大ゴミについては平日も受け入れております。			



In addition, efforts to solve the garbage problem are also being carried out by various food and beverage companies. Taking UCC as an example, UCC has set goals focusing on PET bottles, which are the main container and packaging material for beverage products, and is practicing product manufacturing that takes into account the reduction of environmental impact. We have set the ratio of PET bottles made from recycled materials (including those derived from plants) to be 50%. At the UCC Gunma factory, part of the coffee grounds discharged from the factory are turned into fertilizer at a fertilizer manufacturing company in

Gunma prefecture. In addition, the fertilizer is used by farmers in Gunma Prefecture to grow vegetables, and the vegetables grown there are sold at a vegetable market in Gunma Prefecture (Kaze no Hiroba).



However, zero waste does not only have benefits. It takes a long time to purchase because we are particular about materials and packaging, and there are few products in the market that are conscious of zero-waste and plastic-free, so many products are expensive, and we are conscious of using things repeatedly. Due to this, there are disadvantages such as an increase in household goods. Zero-waste cannot be achieved without the help of not only individuals but also companies and governments. Therefore, in order to solve the garbage problem in the future, it is necessary to take measures that can achieve this cooperation.

3 Conclusion

If Katsu town's zero-waste initiatives are spread around the world and put into practice, the world's waste problems can be turned toward solutions. However, depending on the environment and topography, it would be difficult to sort garbage into 45 parts and dispose of food waste at home in each region of the world. Moreover, it is not necessarily the case that people around the world will be positive about the waste problem. Therefore, in the future, I think that we must find a way to spread the efforts of Kamikatsu town and find a way for people to take the initiative to solve the garbage problem in any region.

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<Book>

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"Challenge to Zero Waste Frontline of Zero Waste"

Author: Shusaku Yamaya / Published: 2016

Land-based aquaculture to protect the earth

~Aiming for tuna from Gunma prefecture~

5107 Imai Emi

Abstract

This research has three main conclusions. Which are (1)disseminate and implement simple closed-loop land-based aquaculture facilities, (2)making mulch with biodegradable plastic,(3)use the Internet to spread awareness about the problem of marine pollution and gather a lot of inspiration. In this paper, I would like to increase the credibility of my conclusions and actually produce results and to be able to farm seawater fish in prefectures and inland countries,where there is no sea.

1 Introduction

In our daily lives, we can learn about the relationship between humans and the sea through food, culture, and the economy. We can say that people have been saved by the sea.However, in recent years, environmental problems in the sea have been getting worse. In particular, marine plastic litter and marine pollution should be dealt with immediately, and if this ploblem continues as they are, they will become even more serious. Japan and the world, which has benefited from the sea even now, should tackle environmental problems of the sea. We set up a research question, "What should we do to popularize land-based aquaculture that can protect the marine environment, resources, and culture, and actually produce results?" The hypothesis is land-based aquaculture and spread it “ to the world, and combine it with hydroponics.

There are three main research methods (1)information gathering, questionnaires, 3) fieldwork.The research was done as follows.In information gathering, there are many (academic articles and papers on the Internet.Since it has been reported in the news and newspapers, we will also investigate it. I think it's written in books, so I also use the library. In the questionnaire, we asked people who are actually engaged in fishing to tell us about the current marine environment. The contents include garbage near the coast, awareness of microplastics, and changes in the number of fishermen. In the fieldwork, I had a dialogue with Professor Kenichi Kasuya of Gunma University, who is researching biodegradable plastics. He mostly agreed on incorporating biodegradable plastics into fisheries. We also visited the research institute of Professor Tsuyoshi Umezu, who is researching land-based

aquaculture in Maebashi City. He spoke to us about making better use of land-based aquaculture.

2 Discussion and implications

"Microplastics" are small plastics less than 5 mm in size. As a result of a large amount of this flowing into the sea, in addition to physical problems such as accidental ingestion by fish, the toxicity of chemical substances has caused great damage to all living things in the sea. This not only destroys the marine ecosystem, but also threatens human health.

In addition, the marine pollution problem is mainly seawater pollution caused by domestic wastewater and wastewater discharged from aquaculture facilities flowing into the sea. In Japan today, domestic wastewater is properly treated, but wastewater from aquaculture facilities is not properly treated, so abnormal nutrients flow into the sea, causing red tides and The ecological balance has been disturbed.

I have been researching this microplastic problem and marine pollution in relation to Japan's food self-sufficiency rate. Japan has a low food self-sufficiency rate, but the exclusive economic zone from which marine resources can be obtained is very large. I felt that I should make more use of this characteristic of Japan. Protecting the marine environment leads to increased fish catches. It is also important to pass down Japanese culture, including the world-renowned Japanese tradition of "Washoku". As a result, I wanted to protect the seas of the future and contribute to preserving Japanese traditions. There are a number of current issues. To enumerate, due to the relatively recent emergence of microplastics as a problem, there is a lack of public awareness and knowledge, a decline in Japanese people's interest in fishing, a decrease in the number of fishermen, and serious pollution of the sea. Japan's food self-sufficiency rate, lack of manners, etc. From these numerous problems, we will proceed with research and think of things that can lead to improvements, even if only a little.

As I proceeded with my research, I thought that biodegradable plastics and land-based aquaculture would be effective. However, there are still shortcomings in these two, and awareness must be raised. In the future, we will proceed with research and consider more effective and practical methods and methods of appeal.

First, we found that it would be difficult to put biodegradable plastics into practical use under the current circumstances. We still found improvements in terms of cost and durability, so next time we will think about what to do to improve it. Specifically, I would

like to proceed with my research while predicting where improvements can be made and for what purpose.

One suggestion is to incorporate biodegradable plastic into the mulch (the black plastic sheet you use to make strawberries). I thought it was the best because it easily blends into the soil and does not need to be thin and durable. Therefore, I would like to move towards multi-production of biodegradable plastic.

Next, let's talk about land-based aquaculture. Land-based aquaculture means farming fish and shellfish in an artificially created environment on land. Land-based aquaculture can be broadly divided into two methods: the "flowing system" and the "closed circulation system." The free-flowing system takes in and discharges water from the sea, rivers, and groundwater. It is mainly used in eel farming. On the other hand, the "closed circulation system" purifies the breeding water with a filtration system, circulates it and uses it repeatedly for farming, so it is an environmentally friendly system. In my research, I will mainly consider the closed circulation type from the merit.

The current hypothesis is implementation in supermarkets. Farming in the basement of a supermarket not only reduces marine pollution, but also eliminates concerns about anisakiasis and reduces transportation and other costs.

Also, from the research so far, I have invented things by myself, such as Seabin and NOHBO, so I would like to ask more people to come up with ideas after getting more people to understand the environmental problems of the sea in the first place. is also effective. So, in parallel with this, I will think about and act on activities that will make more people aware of environmental issues.

3 Conclusion

This research has three main conclusions. Disseminate and implement simple closed-loop land-based aquaculture facilities. Making mulch with biodegradable plastic. And using the Internet to spread awareness about the problem of marine pollution and gather a lot of inspiration. One suggestion is to incorporate biodegradable plastic into the mulch. I thought it was the best because it easily blends into the soil and does not need to be thin and durable. Therefore, I would like to move towards multi-production of biodegradable plastic. About land-based aquaculture, I will mainly consider the closed circulation type from the merit.

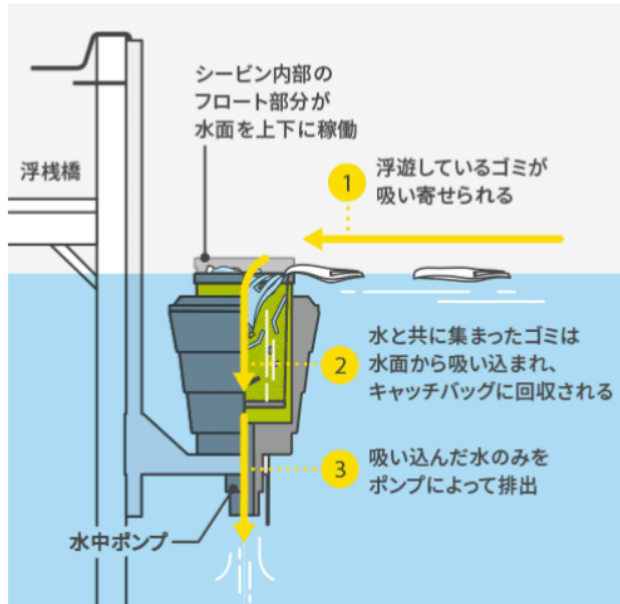
From now on, I would like to increase the credibility of my conclusions and actually produce results. And someday, I would like to be able to farm seawater fish in seamless prefectures and inland countries.

d. Efforts to solve **Seabin**

ocean trash can

Garbage can be collected without adversely affecting the ecosystem

1. marine plastic trash



1. marine plastic trash

d. Efforts to solve **NOHBO**

shampoo that without bottle

The pack is plant-based and at the same time prevents overuse of shampoo.



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Charm of car

~ Save gasoline cars ~

5108 Takuto Uehara

Abstract

As my theme, “Charm of car” means the engine sound and exhaust sound of gasoline cars. Only gasoline cars have such both sounds called “good” sounds. However, in recent years the government recommends electric cars in many countries including Japan. Therefore I want to save the “Charm of car”, belonging only to gasoline cars, and start researching.

But it is difficult to change the policy to make electric cars prevail by only myself, so the conclusion of this study is that “gasoline cars will not be seen on public roads in the future” but I suggest making gasoline cars for circuits. There are some limits of sound or speed on public roads, because some people might think the exhaust sound is too noisy, but they are not in circuit, so I suggest we should establish driving as one amusement. Then drivers will be able to enjoy driving with less limits.

1 Introduction

Recent years some carbon-reduction campaigns are being carried out all over the world. In that, carbon emission by gasoline cars is especially thought of as one of the big problems. In particular, a lot of rich people especially tend to spend a lot of money for good-quality. And also Most good-quality cars which people think of are all gasoline cars such as PORSCHE, BENZ, FERRARI, and LAMBORGHINI. Because such gasoline cars have emitted a lot of carbon, the government recommends production of electric or hydrogen cars, and not gasoline cars but electric cars and hydrogen cars are produced all over the world. For example, in Japan, the government set the goal that we will stop the production of gasoline cars by 2030 and the production of electric or hydrogen cars will be all. However, some people like to drive to hear good sound and driving is one of their hobbies. Certainly, I also think cars have engine sound and exhaust sound as their charm. If gasoline cars disappear from the world, their charm will also disappear. Then I thought we should save the “Charm of car” and started this research with “Are electric cars ecologically-friendly?” as a research question of this study.

2 Discussion and implications

The conclusion of this study is that “gasoline cars will not be able to be seen on public roads in the future”.

First, 20 percent of people in Japan have imported cars, most of which are gasoline cars. But a lot of countries aim to stop selling gasoline cars. Also, noise from cars may be troublesome in Japan, so the cars produced from now will be strictly restricted the volume of exhaust sounds. Like these, a lot of things are done to make electric cars prevail. Certainly, electric cars are eco-friendly, less polluting, and less noisy than gasoline cars. However, electric cars do not have high power capacity, cruise short range and need a longer charging time than gasoline cars. Though we may be able to solve these problems by technology development in the future, gasoline cars are superior to electric cars at this point. So I think gasoline cars should not be disfellowed.

Next I focused on the carbon produced in power stations. Power stations produce the electricity which electric cars use driving and emit a lot of carbon. No matter how little carbon electric cars produce, power stations' production of carbon dioxide makes it no use. Previous research shows that Japan will fall into an electricity shortage if electric cars prevail, considering some conditions. If this prevalence continues, we have to make other new electricity supply sources. However, if we get a new electricity resource, it will produce carbon. Considering that, gasoline cars may be better for this society than electric cars. But I can not change the object, "expel gasoline cars", so I suggest making gasoline cars for circuits. If gasoline cars are made for circuit, there are less limits of speed, sound, and so on so we can establish driving as one amusement.

3 Conclusion

I concluded this research that gasoline cars are superior to electric cars for this society as I wrote. However gasoline cars are going to be replaced by electric cars in the future. So I thought that gasoline cars should be made for circuits to establish driving as an amusement. However only a few people know about the system of circuits and driving circuits will be expensive for them so they can not go there easily. We must continue this research to solve these problems.

Also this research must include world affairs.

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(2021/12/09)

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車好きはガソリンが好き？なぜイマイチEVに熱くならないのか
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(2022/03/06)

Toward a More Free Education

~For a Frenet Education~

5109 Mei Utsugi

Abstract

This study will consider the incorporation of Frenet Education to make the current education in Japan more liberal, with a view to reducing the number of children who are not attending school, which is increasing every year. It is now clear what kind of education method Fresne Education is and what kind of impact it has. Since it is still difficult to implement Fresne Education in all public schools, it was concluded that the best way to start with is to establish more free schools within schools and to promote Fresne Education in those schools. We believe that the appropriate way to promote Fresne Education is to gradually expand it from in-school free schools to regular classes, and from comprehensive time to practical and major subjects, not as the main focus alone, but in parallel with each other. How to overcome the legal and university entrance examination systems that exist in Japan remains an issue.

1 Introduction

In this study, based on the situation that the number of children who do not attend school in Japan is increasing year by year, I consider the health of such children and their difficulty in finding employment in the future to be the problem. The study also aims to reduce the number of children who do not attend school by using an educational method originated in France called Frenet Education, and to clarify the appropriate educational method in Japan.

In their research on the theme of freer education and Fresne education, Professor Kazuko Naohara of the Department of Child Communication at Edogawa University and Assistant Professor Yukino Watanabe of the Department of Child Development at Bunkyo Gakuin University wrote papers on the theme and subtheme "A Study of Learning Environment in Fresne Education, a Case of Fresne School in the Netherlands and Belgium" and "The Fresne School in the Netherlands and Belgium". In their paper, they described in detail the advantages of Fresne education and the local situation. As a final summary, he wrote about Fresne Education in Japan, "In Japan, new schools aiming at individualization and collaboration with children as the main subject have been established one after another in the past few years. While paying attention to these schools, we feel it is important to discuss with people in different positions, not only those involved in fresno education, what kind of

learning environment is desirable for public education in Japan in the future. He stated. My research is based on the same idea, but from the standpoint of trying to think in my own way about what is desirable for public education in the future.

The hypothesis is that Fresne education is completely different from the current Japanese education system in that the children make up their own timetables, there are no set textbooks, and there is no set format of classes, etc. It would be difficult to incorporate all of these elements, but it would be good if some of this free atmosphere could be incorporated into the program. As a research method, we are planning to look into articles on Fresnel education on the Internet, schools that actually provide such education, Fresnel education research groups, and Japanese laws on education.

2 Discussion and implications

•truancy in japan

First, among long-term absentees from elementary and junior high schools, the number of truant children was 196,127 (181,272 in the previous year), and the number of truant children per 1,000 students was 20.5 (18.8 in the previous year). The number of children who are not attending school has increased for eight consecutive years, reaching a record high . (Ministry of Education, Culture, Sports, Science and Technology, 2020)

In addition, according to the "Survey on the Attitudes of Young People (Survey on the Actual Conditions Concerning Withdrawal)" conducted by the Cabinet Office, non-attendance at school (elementary, junior high high school) and failure to find a job accounted for about 10% and 20%, respectively. What this indicates is that being truant from school can lead to withdrawal. Also, regarding the job search of those who

While the rate of students going on to higher education has improved, there are still a number of issues to be addressed. The high school enrollment rate for this age group is 98%, while the college enrollment rate is approximately 60%, a large gap. The high school dropout rate for those who have never been out of school is more than seven times the national average. The situation in the job market is also severe. Only 9.3% of those surveyed are working as full-time employees. This is less than half of those surveyed in the previous survey (Komeito, 2014).

This means that children who have been out of school are more likely to have difficulties in finding a job than those who have been in school. From these findings, This increasing number of children not attending school is an issue that we have taken up because we believe it will have a negative impact on the future of these children.

•Efforts for Children Not Attending School

This section describes what kind of support the government, educational institutions, and schools are providing for children who are not attending school. First, the government is creating an environment that makes students want to go to school, promoting counseling, and establishing educational support centers. It is true that these systems may help students, but the number of truants is not decreasing. Moreover, even if such a system exists, it is not widely used in the field. Specifically, there are not enough "special schools for truancy" and "educational support centers" for the number of truant students, which local governments are obliged to make an effort to establish, and although there is a system to receive credits, there are few students who receive attendance certification for their studies outside school. Significantly fewer pupils receive attendance certification for learning outside of school. Thus, the actual situation is that they are not widely used. I came up with the idea that it would be a good idea to have a kind of free school in schools, although the difficulties involved in establishing a private free school, etc., could be seen as the need for money and space.

•Free School System

This section discusses in-school free schools. As an example, I will discuss Yamauchi Elementary School in Yokohama. The school's in-school free school is located in one of the "special needs classrooms" and is available to students who are behind in their classes or who have difficulty learning in a group setting, and who are temporarily separated from their regular classes. It is a place where such children can learn and think and act freely on their own when they cannot attend classes in a classroom or when they are unable to do so. I believe that this in-school free school method is effective from the perspective of reducing the number of children who do not attend school, and as a place where free education can be developed.

I also looked into in-school free school programs at other schools. At Fukuoka Junior High School, all students who wish to attend are accepted, including those who have concerns or problems in regular classes and foreign nationals who have trouble keeping up with classes in Japanese. The number of truant students had been gradually decreasing. This led us to believe that an in-school free school would lead to the creation of a place to stay within the school and prevent students from becoming truants.

But, I thought that each student in that in-school free school often studies alone, and dialogue may be less frequent than in regular classes. In my opinion, dialogue is an important skill for the future. When I was looking for an education that would allow me to learn freely while doing dialogue, I came across something called Fresne Education.

•Fresne Education

I will describe what I have researched and thought about Frenet Education. Fresne Education was started by a teacher named Célestin Fresne in rural France, and has spread not only in Europe but also in Latin America and Africa. I asked Mr. Junichiro Yamashita of the Frenet Education Research Group via email about the characteristics of Frenet education.

"Free composition" is often mentioned as a feature of Fresne Education.

This is not a free-assignment essay. The theme is open-ended, but "free text" is more accurate. In other words, the compositions written by the children are the text = learning material. The basis of Frenet education is to learn from living words, not from textbooks set by the state.

In the past, one of the slogans of Fresne Education was "A printing press in school. With a printing press in the classroom, the children could produce their own texts. They print them with their own hands. It means there is work to be done.

Children of different ages learning is not necessarily a must requirement for Fresne education. However, when there are different age groups of about three grades, learning occurs among the children and it enriches the learning process. And, it is possible to have children of the same age group learning at the same time.

Although it is called "individualized learning," children make their own timetable and learn at their own pace. Fresne Education's classrooms are very quiet. The students work silently on their own learning.

In terms of dialogue, we have school cooperatives.

I found that the educational method was very different from that of today's Japan. Frenet education method is said to have attracted attention from all over the world because it is a groundbreaking educational method that incorporates "free expression" by the children. The most appealing thing about Frenet education is its "respect for freedom. I thought that this appeal could be linked to my theme of more liberal education.

- Frenet education learning concerns.

As mentioned above, Frenet education is very free, but to be honest, it is natural that some may feel that this does not help students acquire academic skills. However, according to a study conducted by Nagoya University of Commerce and Business, the lowest learning retention rate is 5% for "lectures". Simply passively listening to a lecture does not result in a high retention rate. The three categories of active learning, "group discussion," "hands-on experience," and "teaching others," have a high learning effect. Frenet education is considered to have great potential for this retention. The individual learning of Frenet Education is what makes friends meaningful strangers, which in turn creates cooperation and enhances the effectiveness of the program.

- From previous research

According to previous research, the form of Frenet education is

The Frenet technology is based on the cooperative nature of school life and the collective discipline of a cooperative school. Frenet technology also flourishes on the basis of cooperative school life and collective discipline. Some call this self-management, but it is more appropriate to call it co-management by teachers and children, since the role of teachers is also important. Frenet's pedagogy, which emphasized handiwork and the development of individual interests and lifestyles, was also effective for children who did not understand French or had developmental problems (Nawahara, K., Watanabe, Y., 2020).

Frenet was trying to foster democratic and free citizens by guaranteeing free expression and

trusting both children and teachers. I felt that the two words "trust" would ultimately be important in expanding to free education. Also

Learning that centers on the words and expressions that emerge from children's lives and themselves is a characteristic of Frenet education, and the learning that extends from these activities leads to individual exploration and research. Children at Frenet School freely express what they see, feel, think, and discover. Learning develops based on what is depicted in the essays. The compositions are based on scenes from each child's life, and are recorded as individual essays, which are presented and discussed with their peers. This may lead to thematic studies in which the children work together on their own exploration and research. These children's records are kept in a place where they can be seen at all times during their daily lives, either on a bulletin board or in a booklet, and kept within the reach of the children. (Same author as above)

Frenet education can lead to theme learning. I thought it would be good if we could take a good balance between the current lecture-style classes and free time.

Some classes discussed self-governing bodies and purchased the cushions they needed. "Frenet teaches you how to spend money," Richters said two years ago. There are also proactive activities by the adults. Some parents held study sessions at school in the evenings, and some parents built small huts to think about environmental issues, and suggested ways to keep the huts warm. (same author as above).

Frenet Education also has a different attitude toward parents. There are reports that Frenet Education has been effective for children who do not understand French and children with developmental problems. From this, I thought that Frenet Education might also be effective for children who are not attending school.

3 Conclusion

The first conclusion was to increase the number of in-school free schools and to spread Frenet education there in order to reduce the number of children who are not attending school. The most important question was whether or not Frenet Education is suitable for

public education, and what form it should take. However, it was found that a free atmosphere has various advantages, such as reducing the number of children who do not attend school, improving academic skills, and encouraging students to research topics of their own interest.

So what I consider to be the proper form of this education is(1) Expanding the number of in-school free schools and then offering a choice between regular classes or free schools that incorporate frenetics education.(2) Pilot the Frenet method in regular classrooms (3)In the college entrance examinations, the frenetics pedagogy is put in place from subjects that are not necessary.(4) Attempt to introduce Frenet education in line with Japanese laws on education and university entrance exams.These four processes are.

As future research topics, we would like to look more deeply into what actually happens to the retention of learning ability, which cannot be determined due to the lack of examples of implementation, and how to overcome this problem with regard to laws on education and the university entrance examination system.

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October 4, 2021 - October 9, 2021

•Miho Fujita,NPO Cochleo ForestNPO

November 12, 2021 - November 19, 2021

World Study Reform

~Raising of those who have education~

5110 Takuma Osawa

Abstract

Many junior high schools in Japan have a subject selection system called "humanities and sciences selection". This means that many who choose the humanities lack knowledge in the sciences, and many who choose the sciences lack knowledge in the humanities. The number of educated people with a certain level of knowledge in various fields is decreasing in Japan, due to the fact that there is no longer a choice between humanities and sciences, and the need to accumulate knowledge has decreased due to the development of the Internet.

These effects have put Japan at a disadvantage in the globalization of the world. Regarding the problem of low demand for the humanities in Africa, we propose that the problem be solved by improving laws through ODA and by providing preferential treatment for overseas study in humanities research. Since this is directly related to the shortage of human resources for law studies, we believe that the development of laws through ODA will improve security and increase the demand for legal human resources. I also propose preferential treatment for overseas study in humanities research. These are my suggestions.

1 Introduction

I have long been interested in subject choices, and have been deeply concerned about what people learn there, and about universities and careers in the humanities and sciences. I read several online articles about how subject choice in Japan is disconnected from the rest of the world, so I decided to investigate why this is the case and what subject choice is like in the rest of the world.

In Japan, many secondary schools have a subject selection system called "Bun-Ri Selection". If students choose science, they focus on the knowledge required for natural science and other subjects; if they choose liberal arts courses, they focus on the knowledge required for other studies (e.g., sociology, humanities, etc.) These are the definitions of arts and sciences, but conversely, those who choose arts lack knowledge in science and those who choose science lack knowledge in humanities. In other words, those who choose the humanities lack knowledge of the sciences, and those who choose the sciences lack

knowledge of the humanities. We hypothesized (and will discuss later) that these humanities choices and the development of the Internet, which has reduced the need to accumulate knowledge, may have contributed to the decline in the number of educated people in Japan who have some knowledge in a variety of fields. We discuss this evidence in more detail in the next section) (we discuss this evidence in more detail in the study results). By educated people we mean a decline in the number of people who are able to broaden their academic horizons, see things from multiple perspectives, think independently and comprehensively, make sound judgments, develop a rich sense of humanity, and situate their knowledge and lives in society. (according to the Ministry of Education, Culture, Sports, Science and Technology) and a decrease in the number of leaders (according to the Ministry of Education, Culture, Sports, Science and Technology). This is a decrease in the number of leaders. Such an impact puts Japan at a disadvantage in the globalization of the world. In addition, this study will similarly investigate and research subject selection around the world.

Based on the above, we would like to discuss ① the impact and problems of humanities selection in Japan and how to improve them, and ② the actual situation and issues of subject selection in the world and how to improve them.

Research Question

- What are the problems posed by the extreme choices?
- What is the world's choice of subjects?

Before explaining the methodology of this study, we would like to reiterate the significance of this study. In today's world, globalization is progressing and the world is becoming smaller and smaller. In order to share awareness of issues in this medieval world, there is a growing demand for human resources with leadership skills. However, my current theory that the extreme selection of humanities and sciences leads to a decline in the number of leadership talents may move Japan in a disadvantageous direction in this social change. Therefore, I thought that by proposing and implementing corrective measures in this study, the decline in leadership talent could be halted. The same applies to the rest of the world.

2 The way to research

First, this research will not only utilize the Internet and literature, but also remote work and fieldwork (which can be difficult in this day and age). In particular, we intend to gather information and research on the impact of the humanities directly as well as from institutions that offer course selections, such as the Ministry of Education, Culture, Sports, Science and Technology. at the universities that students would enroll in if they chose each option (e.g., the College of Engineering for Science).

We also intend to research subject choices around the world through the Internet, literature, and interviews with experts.

Once we have gathered information, the next step is to formulate a hypothesis. If there is anything that needs to be improved, we will gather information again, formulate a hypothesis, and test it. By proceeding with this series of steps, we hope to improve the accuracy of this research. This is our research methodology.

3 Results and Discussion

For this study, we divided the research into developed and developing countries. First, let's discuss the results for developed countries. In Europe, the United States, and other countries, there was not as much separation between the arts and sciences. For example, French high schools offered three elective courses in sociology, literature, and sociology, but during the Macron presidency, these courses were eliminated due to the bias in favor of each subject, creating a wide range of academic disciplines. It is still offered to this day. We predict that this will allow social and other issues to be shared among the French people in the future. The reason for this is that a broad range of studies allows for a systematic understanding of society. However, in Japan today, to this day, many schools force students to choose between liberal arts and science. As a result, it is difficult to share awareness of the issues in Japan. In fact, until recently, there have been problems such as the existence of political committee members and people with limited knowledge of the law being victims of fraud. We also believe that the lack of human resources who can share the problems may lead to a decrease in the number of leaders. This may be the reason why Japan is said to have a low international voice. In an increasingly globalized world, the lack of human resources to serve as leaders is a major crisis. Therefore, this problem needs to be solved as soon as possible.

Next, I will explain the results in developing countries. Currently, developing countries are focusing on developing human resources in the sciences. This is because the science and engineering knowledge learned in science is very popular because it leads to immediate income. The unpopularity of humanities personnel in developing countries is also a problem. This is because most people do not know much about them, even if they study law or economics, so there is little demand for them. In addition to this, another reason is that most people go to graduate school to learn languages and law thoroughly, and it is difficult to go to graduate school for economic reasons. Therefore, there is a low demand for humanities personnel in developing countries. The first reason is the reason for the proposed ODA-funded legislation. In developing countries, crime rates are higher than in developed countries and the demand for lawyers and other legal professionals is low because people are less likely to go to court for minor offenses or because the government does not provide employment for legal professionals . These are the results of our research and discussions.

4 Conclusion

In order to solve Japan's problem of selecting the humanities and sciences, we felt it necessary to require private universities, which are not currently required to take the Common Achievement Test, to take the Common Achievement Test in five major elective subjects. In addition to basic knowledge, the common test can check the ability to think and express oneself, which is required in a global society. We thought that adding the Common Achievement Test to the conditions for receiving management subsidies would alleviate some of the barriers to the rigorous selection of subjects for university entrance examinations.

We would also like to propose that the problem of low demand for the humanities in Africa be solved through ODA legislation and preferential treatment for overseas study in humanities research. I thought that this is directly related to the low number of people studying law, so I believe that by enhancing law through ODA, there will be a movement to improve public security, which will increase the demand for legal professionals. However, this also raises concerns about the principle of non-interference in internal affairs. We also propose preferential treatment for overseas study in humanities research. The sole reason for this is the lack of literary research facilities in developing countries. These are my proposals.

Data on humanities and science selection are relatively scarce. In addition, we have not been able to conduct sufficient fieldwork and obtain information from experts. Therefore, I would like to interview people involved in education. These are our future prospects.

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Photography and LGBTQ

~The Power of Photography and Hope~

5111 Hana Oshima

Abstract

I would like to propose a "As It Is Project". This project is based on the OUT IN JAPAN photography project. My idea of a photography project is that coming out is not the goal. At first, I was also looking at coming out. However, the percentage of people who do not come out is higher. That's when I came up with the "As It Is Project. This project is for those who suffer from gender identity disorder. For one day, they become what they want to be and take a picture of themselves. The goal of this project is to affirm the person they are, which they have always hidden from society. This allows people to be who they are without having to come out. There are many issues to be addressed, such as whether the project will attract students, management of personal information, location of the photo shoot, equipment, and so on.

1 Introduction

The purpose of this study is to use the power of photography to bring some hope to LGBTQ people. The LGBTQ population in Japan is currently estimated to be between 3-10%. In recent years, programs showing gay love and words such as "genderless" have become popular, making LGBTQ people more accessible. However, there are more than a few who find them repulsive. They may not be able to fall in love and bond in a normal way or have the personality they want. You may have to give up a lot. But I don't want you to run away from your "love. I don't want you to give up. With this in mind, I decided to research on LGBTQ people in this year's study. I chose photography as a means of communicating hope to LGBTQ people.

There are two reasons why I chose this theme. First, I have always loved photography. Second, I believe that photography has the power to motivate people. For example, in researching activities related to LGBTQ people, I found a photography project. The people who were photographed in the project were really attractive "as they are". They all had smiles on their faces, and I wished I could do something with my photos like that. Also, I would like to add that this study was not intended to oppose or correct those who have anti-LGBTQ views. Therefore, this study will be conducted with LGBTQ people. The ultimate goal is to take their own photographs and disseminate them on social networking sites.

As for the research method, I will first research the following three topics before the summer vacation: (1) basic information about LGBTQ people, (2) activities of LGBTQ people, and (3) the

Black Lives Matter movement as a similarity in terms of "discrimination". During the summer break, students will practice shooting photos in preparation for the final goal. Also, during this period, students should decide on the theme of what they will be shooting to convey. In addition, they should also give some thought to the location and subject matter of the photo shoot. If possible, ask people who have been involved in photography projects about their shooting methods and what they paid attention to when shooting.

2 Discussion and implications

About LGBTQ

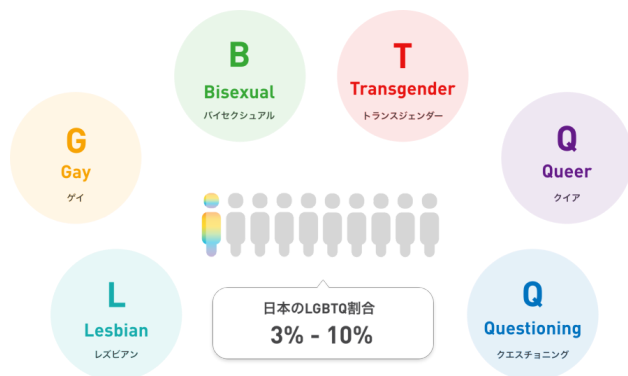
First of all, LGBTQ is an acronym for Lesbian, Gay, Bisexual, Transgender, Queer, and Questioning. (The term is also sometimes used as a generic term for sexual minorities.

LGBTQ Status

We would like to take a look at the following survey conducted by one company to find out how prevalent "LGBT" is in Japan and how long they have been in Japan. The Dentsu Diversity Lab, an organization at Dentsu Inc. (headquartered in Minato-ku, Tokyo; Hiroshi Igarashi, President; hereinafter "the Company") that specializes in research, analysis, and solution development in the area of diversity and inclusion, in collaboration with the PR Solutions Bureau, surveyed a total of 60,000 people aged 20-59 nationwide in December 2020. The survey was conducted online regarding sexual minorities, including LGBT people (hereafter referred to as the "LGBTQ+ group*1").

Based on this survey, we would like to look at the penetration rate of LGBT and the percentage of the LGBTQ+ population in Japan. The results of the survey showed that 8.9% of the respondents fell into the LGBTQ+ demographic. In addition, the rate is 80.1% ,which increased by 11.6percentage point from the 2018 survey, making it seem as if the term LGBT has become well established over the past three years. However, the challenge was that awareness of various sexualities (Q+) other than "L, G, B, and T" is still low.

The next look at the LGBTQ population in each country revealed that the United Kingdom has 2%, France 7%, Germany 11%, and Spain 14%. A ranking of 150 countries in terms of their friendliness to LGBTQ+ tourists was also released, with Sweden in the first place, followed by Canada in the second, Norway in the third, and other Nordic countries Finland in the seventh, Iceland in the ninth, and Denmark in the 14th. Factors that were used as criteria for the evaluation included the legal status of same-sex marriage, protection of workers' rights, the existence of



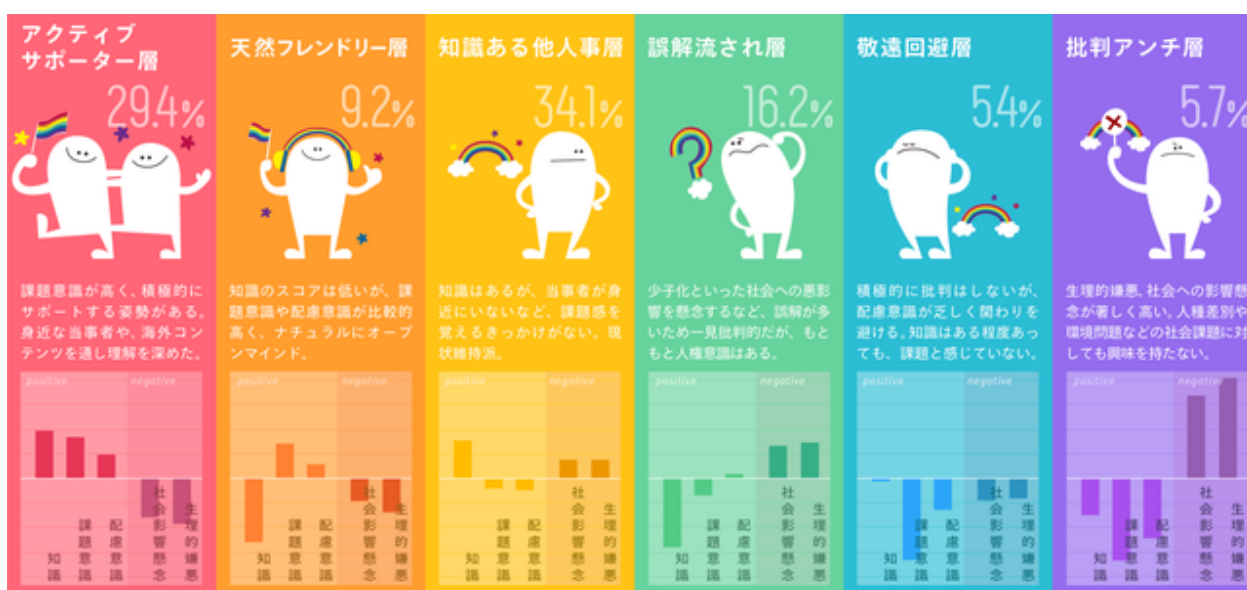
anti-discrimination laws, and the existence of anti-LGBTQ+ laws, some of which do not directly affect tourism. Sweden has a long history of LGBTQ+ rights and was the first country to legalize same-sex sexual activity in 1944 and the first to allow legal gender reassignment for transgender persons who have completed gender reassignment surgery. Same-sex civil partnerships were legalized in Sweden in 1995, and same-sex marriage became legal in 2009. A joint study conducted by the Danish Institute for Suicide Prevention and Stockholm University found that suicide rates among LGBTQ+ people in relationships have dropped significantly in Denmark and Sweden after these laws were enforced.

In addition, discrimination based on sexual orientation, gender identity, and gender expression, the most relevant point for tourists, has been illegal since 1987. Conversely, Nigeria and Qatar rose as dangerous countries. In Nigeria, homosexuality is punishable by up to 14 years of imprisonment, and in some states the death penalty is imposed under Sharia (Islamic law). Discussions of LGBTQ+ rights are also illegal, and in Qatar, which will host the FIFA World Cup soccer tournament in 2022, homosexual acts are punishable by one to three years' imprisonment, whipping, or death based on Sharia. As shown above, each country's culture and religion has different levels of tolerance toward LGBTQ people.

Analysis of non-parties

Dentsu asked 5,685 straight respondents multiple questions asking what they thought about LGBTQ+ and analyzed the factors into five categories: awareness of issues ,acceptance,feeling of repulsion,worry over social impact related knowledge.The results are described in Figure 2.

↓ Figure 2



The results were classified into six categories: active supporter, natural friendly, knowledgeable stranger, misunderstanding-driven, respectful-avoidance, and anti-criticism. The

active supporter group (29.4%) is characterized by a high awareness of the issues, an active supportive attitude, and a deepened understanding through familiar parties and foreign content. The Natural Friendly group (9.2%) scored low in knowledge, but were characterized by a relatively high awareness of issues and concern, and a naturally open mind. Knowledgeable strangers (34.1%) have knowledge, but are characterized by a lack of triggers for a sense of issues, such as not being close to the people involved, and are status quo voters. The Misunderstood and Misappropriated group (16.2%) is apparently critical due to many misconceptions, such as concerns about negative effects on society such as the declining birthrate, but they are characterized by their original awareness of human rights. The esteem-avoidant group (5.4%) does not actively criticize, but has little sense of consideration and avoids involvement. They are characterized by a certain degree of knowledge but do not perceive it as a challenge. The anti-criticism group (5.7%) is characterized by significant physiological dislike and concern about the impact on society, as well as a lack of interest in social issues such as racism and environmental problems. Each of the above six strata has its own characteristics. The most common group was the "knowledgeable others" group. It can be said from this that the number of knowledgeable straight layers is increasing. In addition, there are many people who have only accumulated knowledge and do not see LGBTQ issues as their own business.

Response by each country

Next, I would like to look at the responses of different countries to LGBT. First, let's look at same-sex marriage. Canada: Cohabitation and Marriage Act UK: Marriage Act 2013 Netherlands: Marriage Emancipation Act etc. Japan and Russia are the only G8 countries in the world that do not recognize marriage or partnership laws as LGBT rights. However, the introduction of same-sex partnerships, which officially recognize LGBTQ and other sexual minority couples as equivalent to marriage, by the end of FY2022 has recently made headlines after Tokyo Governor Yuriko Koike announced at a plenary session of the 4th regular session of the Tokyo Metropolitan Assembly.

The partnership system has continued to expand since its inception in Tokyo's Shibuya and Setagaya wards in 2015, with more than 130 municipalities now having partnership systems in place. As of September 30, 2021, there were 2,277 partnerships granted, indicating that many cohabiting couples were interested in this system.

Coming Out

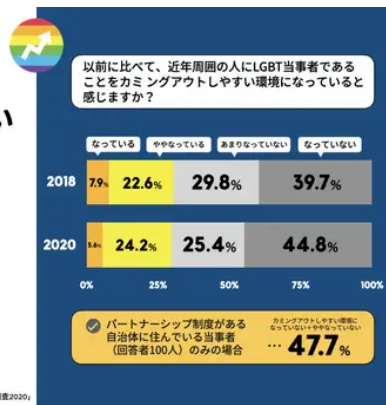
Survey population: 6,240 individuals aged 20-59 (555 in the LGBTQ+ group/5,685 in the straight group)

Survey area: Nationwide

カミングアウトしやすい
環境になっていない

70.2%

出典：電通ダイバーシティ・ラボ「LGBTQ+調査2020」



Survey date: December 17-18, 2020

Survey method: Internet survey

In the Dentsu LGBTQ survey conducted in the manner described above, 70.2% of respondents answered, "Compared to previous years, do you

feel that it has become easier to come out as LGBTQ+ to those around you in recent years?" Compared to 2018, the number of respondents who answered "no" increased, while the number of those who answered "yes" decreased. These results indicate that the environment for coming out is deteriorating. When asked if they had come out as LGBTQ+, 57.4% said they had not. Some of the reasons given were: "I don't think it is particularly necessary to tell people," "I don't want to be prejudiced," and "I don't want to make the other person feel uncomfortable. However, we should not forget that at the same time, there are those who would like to come out.

OUT IN JAPAN



There is a project that has fulfilled the wishes of such people. It is a photography project called OUT IN JAPAN. This project spotlights LGBTQ and other sexual minorities in Japan, and aims to reach 10,000 people in 5 years by having various photographers take a variety of portraits, including those of ordinary people. The photo on the left is an actual example. Midori Saito, who has gender identity disorder, says, "When minorities speak out, the true shape of the world appears. This will be the beginning of a society that is better for everyone.

Coming out is not only for oneself. All of the participants in this project express the same wish.

3 Conclusion

I have been researching the topic of photography and LGBTQ. I believe that I have learned many things about LGBTQ people, their thoughts and feelings, and the state of LGBTQ people around the world that I did not know before. Therefore, I would like to propose the "photography project" that I have had in my mind since the beginning of my research.

This project is based on the OUT IN JAPAN project. The difference, however, is that the subjects of this project are students, and their faces will not be shown, and their names will not be made public. Also, the purpose of the photography project I have in mind is not to come out. At first, I was also looking at coming out. But coming out takes a lifetime of courage. And the

percentage of people who don't come out is higher.

That's when I came up with the "As It Is Project". This project is for those who suffer from gender identity disorder. For one day, they become what they want to be and take a picture of themselves. The goal of this project is to affirm the person they are, which they have always hidden from society. This allows people to be who they are without having to come out. There are many issues that need to be addressed, such as whether the project will be able to attract students, management of personal information, locations for filming, and equipment. However, if this project can be realized, we will be one step closer to the realization of "a society where people can be who they are".

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The Role of Past Literature for The Future

~The Progress Learn and Pass Down~

5112 Otsubo Ririka

Abstract

The purpose of this research is to protect literary works, to attach new value to past literary works, and to make people familiar with them. Learning about the past is always useful for the future. Therefore, for that future, I would like to use past literary works that have been read as masterpieces. I thought the difference between literature and other arts is that you have to think for yourself in order to understand the goodness of the work or not.

Some people read past literary works themselves as they get older, but the style of sentences is difficult and needs time to get used to. Therefore, if you gradually get used to the unique sense of rhythm and sensibility from an early age, fewer people will get discouraged and stop reading past literature when they reach junior high school age or above, or when they try to read it. The final proposal is collaboration between literature museums, libraries and a kind of educational organization, such as kindergartens, nursery schools, and elementary schools.

1 Introduction

These days, the opportunity to tell personal stories or ideas is increasing. Developing social networking services, self-publishing, literary prize, and publisher accessibility, people make a topic of conversation with typical books and the titles of them, which are spoken as people's topic, they are not always the very same title. However, I wondered if there are any books our future offspring may read after several years. Just like the books that were written in the previous Heisei or Showa period, which are read by us now. In other words, Surviving books. Surviving books have the reason for surviving. The reasons that they have been still appreciated are their uniqueness, observation, ability to describe, traditional artistry, several types of universality, and contribution to present literature and society and then all of them can be the basis for us to read them.

As I read modern Japanese literature avidly, I equipped the flame of the theme, "classical literature : past literature" (this definition includes not only modern literature but also classical literature) as my mutilation. Moreover, In light of the current situation described above, I set this theme with the hope that people will become more familiar with classical literature and pass it on to future generations.

The ultimate goal of this research is to protect past literature and to create an environment in which future generations who wish to come into contact with these literary works can enjoy them without difficulty. The protection and transmission of literary works requires a certain amount of funding (support funds, income from museums, etc.), but in order to stabilize this funding, it is necessary to add new values that will make the city, prefecture, and nation believe that they are willing to pay some money to protect them, and to gain support from both the government and the citizens of Japan. We thought that it was necessary to create a new value that would make the city, prefecture, and country believe that they are willing to pay some money to protect them.

Research methods include, Literature Museum Initiatives, Government initiatives, Differences from other art cultures, and other differences from other art and culture.

2 Discussion and implications

What are the advantages of literary works (novels, poetry, criticism, essays, etc.)? There are probably various advantages, but the most significant is the link of emotions with tremendous realism that occurs when we are exposed to a good work, our imagination, and the future changes in our own lives that will be affected by that work. Some of the positive effects that literary works, not limited to those of the past, can have on people include the development of the ability to think, to know things they did not know, to have virtual life and travel experiences, and so on. In addition to this, many pre-modern literary works also strongly reflect the historical background, thought, and culture of their time. In particular, works that are called "masterpieces" include many of these elements, as well as a high degree of universality both horizontally and vertically, and continue to remain in the hearts and minds of people today.

The purpose of this research is to study the possibility of using pre-modern literary works not only for entertainment, but also to enjoy stories and become familiar with the diversity of cultures and ideas that differ slightly from country to country, and to see if these works can be used to develop human resources who can respond flexibly in an increasingly diverse society. The research question is how literary works from the past can play a role in effectively sharing the ideas, history, and culture of each country in order for its citizens to respect their own and other countries' cultures in an increasingly globalized society.

However, when I look at other works of art, I feel that they are somehow more exciting. I wondered why it is so hard to propagate unlike other arts such as painting, music, theater dance, etc., even though they are the same "art and culture. I wondered why literature has not developed as more and more young people enjoy the traditional culture of the past. Perhaps it is because of the different (if not quite preferable way of putting it) digestion styles of the works.

Paintings and music are often passive, with the viewer passive before first becoming interested in them. They may happen to see it around town, in an advertisement, or on a TV show, and may need time to truly understand it there, but they may easily become interested in it during a short period of time. You become interested in something after seeing it for a moment, and then you fall deeply in love with it as you come into deeper contact with it yourself. However, I have the impression that one cannot become interested in literary works unless one reads, understands, and thinks about the texts from one's own perspective, and then one realizes how interesting they are. Also, the unique culture they possess is harder to understand in literature than in other art fields, whereas other art fields are easy to understand.

If a short quotation is to attract the interest of passersby in order to promote a work of literature, that one sentence must be very well thought out. (Of course, the exhibition of paintings and the music played as background music in daily life also require a great deal of thought.) It would be quite difficult to find a sentence that is short, easy to read, appealing enough to attract people's interest, has considerable destructive power, and could easily

become the crown jewel of a work of art. The beginning of a work is a good place to start, but it is not always the best place to start.

Famous works of literature are easy to understand. In "Ningen Shikkaku," it is "I have lived a life of shame," in "Kanikosen" it is "Hey, go to hell!" or "The Sun Shines Brightly" in "Gentiles," or "Goodbye is the Only Life" in "Kanshu," which is a little different. For a slightly minor work, "Go," rather than "To the Little One. Be brave. If it is a slightly minor work, it might be "Go, little one," from "To the little one," "You are really miserable when you are possessed by the crook called love," from "Onnmi," or "Live, and Fall," from "Depravity Theory" etc. In the first place, good works have good phrases.

In the first place, there are too many good phrases in a good work to narrow it down to just one. I wish it were as definitive as "Where is the romance?", a phrase from Kotaro Isaka's "A cheerful gang turns the earth". Furthermore, there are some sentences that come alive in the flow of the text, so if they are suddenly tossed out on their own, they do not necessarily produce the same beauty as if they were in the flow of the text. For example, in Soseki Natsume's "Dreams of Ten Nights" the words "The color of the water was black" shine because it is a description of a scene in the moment of regret when the main character jumps off the boat to enter the water.

And what about works of poetry? There is no doubt that poetry is one of the things that is closest to people's hearts, but because it is something that is close to their hearts, the works that are liked by each individual are different. We don't want to cut out only one piece and let it pass unnoticed when there are other works that are better (for that person).

Moreover, where will this well-thought-out sentence be published? Train stations, bookstores, libraries, or At this point, it becomes a personal endeavor.

But here, I thought of a phrase from a literary work that I remember for some reason. I think that many of the phrases that strike you when you read a work, good or bad, are ones that you hear often or are familiar to you, for example. In particular, those that we have known since childhood are probably still remembered today. There are a certain number of people who remember and can memorize them even though they don't use them at all now, such as Jugemu. And these are not things that they actively memorized by choosing books on their own, but passively (with a few TV programs or storytelling).

For most young children, it is difficult to deeply understand the meaning of the words of past literary works, even if they can memorize them. On the other hand, after one begins to learn classical grammar at school, one realizes that "this is what the word meant at that time," and at that moment, the memory of the past connects with the present, and a time trip-like thing occurs that completes one's questioning of the past, and one can hope for a flow of feeling that "I see, this is interesting". And I believe that it is possible, in some small way, to make people interested in the classics, and as they grow up and learn various things, they will enjoy the feeling of being able to read what they could not read in their childhood and answering their own memories of the past, and become more familiar with the classics.

This is not limited to reading aloud of literary works. It can occur in a variety of fields. Therefore, we thought that the problem would be how to familiarize them in their early years and how to make their memories of literature in their childhood memorable.

3 Conclusion

Based on the above, I propose active collaboration between literature centers and libraries and kindergartens, preschools, and elementary schools. Since the activities of reading aloud to children are considered to have been ongoing for some time, an approach from a different direction may be a good idea. For example, holding and announcing special exhibitions that elementary school students and younger can enjoy, introducing different works for lower, middle, and upper elementary school students, creating digest versions of difficult works, introducing the author's human touch to dispel the "prestigious" image, and "reading aloud" activities, etc. What kind of activities should we do? We would like to consider what kind of activities would help children develop an interest in reading without making them dislike it, or make it easier for children who already love to read to show interest in reading as well.

I would also like to measure flexible thinking and broadening of ordinary concepts by exposing children to diverse ideas and cultures from an early age.

Challenges include whether there is a shortage of human resources and whether the schedule will be too burdensome for literature centers and libraries. Basically, we believe that curators and librarians do not necessarily need to visit preschools and schools directly. Also, if there is a nearby literature museum that specializes in the authors of the works worked on in class, the school should definitely take advantage of it.

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Control Emotion by Color Psychology

~For Living Enjoy Every Day~

5113 Okamoto Kyouhei

Outline of study

The purpose of this study is to control one's emotion by oneself using the effects which color affect people. From the experiment of The Red and Blue Rooms, the fact that Opsin is not only on the human eye but also on the human skin is discovered. Therefore, we can understand that humans can feel color if humans are blindfolded. I consider that it is useful for my study. However, the role of sight is very important so I think that I should come up with the idea for stabilizing the color effect. My idea is to wear accessories, especially wearing bangles because in the experiment, there is a large quantity of color. I think that it is important to affect human's emotion. From that, my opinion is that wearing accessories is the best solution for my study.

1, Introduction

These days, to continue situation that decreased mood from frequency of people going outside become low by to develop internet have risk of stall the economic situation of whole social. Therefore, I thought we could devise a way to easily manage our daily emotions, so the purpose is to make a way to control emotion every day. The best way to raise emotion is moving but some people think that it is difficult to keep doing. Also, by intense exercise, some people get in bad physical condition.

Therefore I thought that by approaching it from the perspective of color psychology, I could develop a way to control emotion that could be easily implemented. This involves the results of the "The Red and Blue rooms" experiment. In this experiment, blindfolded people were placed in a room with bright red walls and a room with bright blue walls to see what effect they would have. As a result, differences occurred in the red room and the blue room. In other words, it was found that the human body can sense colors even without seeing them with the eyes. In each room, we found that brain activity, cardiovascular activity, emotions, and salivary hormones were affected. We felt that this was an important thing to know about living our daily lives.

Therefore, we tried to use these results to come up with suitable accessories to manage emotions.

2, Discussion and Implications

“The Red and Blue rooms” result was caused by a protein called opsins. This protein can feel color and most of it is in the eye, and we know that this protein is also found on the skin. The effect of color on us is so many. For example, mourning clothes for funerals and weddings. Black is a color that makes us feel a heavy atmosphere and reminds us of "death. White gives an impression of brilliance and purity and is suitable for a glamorous setting. While these are some of the conventions, it affects similar effects in other settings. Therefore, I surmise that the emotional impact of opsins is significant. In addition, some Japanese companies have already divided their meeting rooms into red and blue, depending on the situation. As a result, the meetings are more likely to develop into the development they are looking for and less time is wasted.

From the above examples, I thought that although color has a large effect on emotion, the amount of color required to achieve this effect may also be large. In other words, I thought that accessories such as bracelets and necklaces might be difficult or impossible to produce. However, since bracelets and necklaces are mostly chosen according to one's own tastes and preferences, I also considered that the degree of awareness is greater and the effect is more likely to be produced. Although I have not yet been able to test which hypothesis is more correct, I will proceed with the latter hypothesis based on our own experience so far.

Based on what we have seen so far, I believe that although accessories can be effective, they are more likely to be effective if they have a certain amount of area, so I believe that a bangle analogue would be appropriate for the conditions. Since most bangles are larger than bracelets and necklaces, and yet they are worn on the arm (mainly the second arm), they can be made less conspicuous, and I believe that this is in line with our previous hypotheses.

3, Conclusion

From the above discussion, I conclude that bangles are the most appropriate accessories for this study.

Although I have reached a conclusion, there are still some unresolved issues that remain hypothetical, such as whether a stronger awareness of accessories improves the power of color and how much color is needed to make its effect on the human body visible, which remains unclear. I intend to examine these issues thoroughly in the future to further solidify our conclusions.

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School Bags for Children in the World

~Equal Learning with School Bags~

5114 Ojima Mayuko

Abstract

In Japan, going to school is a normal part of our life. However, there are some children who can't go to school for some reason in the world, especially in developing countries. For example, There are economic problems, lack of facilities or teachers, or not understanding the importance of education and so on. Then I decided to focus on reducing the number of children who cannot go to school due to parental beliefs such as "girls do not need education," and came up with the idea of distributing schoolbags. In conclusion, I wanted to deliver "bags created with ideas from bags made for children in developing countries" to children in Saharan Africa and Central and South Asia.

1 Introduction

I learned that many children in other countries, especially in developing countries, are unable to go to school, even though in Japan it is common for them to be able to go to school. I thought that all people should have access to education because not being able to go to school means not being able to read, not being able to get information necessary for health, not being able to get a stable job, and eventually their children's generation will also not be able to go to school or receive education, which will lead to a spiral. I once participated in an activity to donate school backpacks used for six years in elementary school to Afghanistan, where I found that school backpacks are a sign that a child has gone to school, and that the distribution of school backpacks in the area is a good opportunity for the children to go to school. For this reason, I chose this theme because I wanted to focus on school bags to help people around the world gain access to education.

The research question was "What is the most suitable schoolbag for children in developing countries who cannot go to school to be able to go to school? "

2 Discussion and Implications

Many children who cannot go to school are in Africa, Central and South Asia, where there are many developing countries. The number of children who are out of school is the highest in Saharan Africa, with 20 percent of children in Saharan Africa out of school. In addition, more than 35 percent of children in Saharan Africa and 15 percent of children in Central and South Asia do not attend secondary school.



In addition, in areas where many children are unable to attend school, many students will not have the minimum necessary learning skills ("basic reading, writing, and math skills," according to the ODA e-newsletter). This leads to a negative spiral of poverty, as they become disadvantaged by not being able to work, get a good job, or get the information they need to make a living, and then their children inherit the poverty and need to work, which leads to them not being able to go to school.



The main reasons why children cannot go to school are that they have to work for the family to do chores or fetch water, they cannot pay for school fees and materials due to poverty, they cannot safely attend school due to natural disasters or conflicts, there are not enough schools or teachers, or because they are girls. A lot of girls can not go to school because their parents think that education is not necessary for girls, girls should get married and give birth as soon as possible, and schools don't have the equipment for girls.

Focusing on the lack of education for girls, the "JOICFP Foundation" has been working to donate school bags used and donated in Japan to Afghanistan under the name of "Randoseru (School Bags) Gift of Memories". Each school bag is distributed equally to men and women, regardless of color or other factors. The photo below shows the distribution of school bags to children in Afghanistan.



Although no accurate data is available on the number of children and the number of children attending school in developing countries, according to JOICFP, there are parents who believe that their children, regardless of gender, do not need education, and many parents believe that girls in particular do not need education. By distributing school bags equally to all children, parents who thought that their children did not go to school or did not need to go to school are changed, and parents feel that their children should go to school carrying the school bags that they have received. In addition, by distributing randoseru (school bags) to children throughout the area, children carrying randoseru become a marker of children who are going to school, and even parents who thought education was not necessary can create a trend for their children to go to school by knowing that children from other families are carrying randoseru and going to school. However, while there is a current need for about 60,000 school bags, only about 10,000 have been collected through donations in Japan, which is still not enough. Some students use tattered plastic bags to get to and from school. The plastic bags tear easily, and even the textbooks and stationery get dirty, which can discourage children from learning.

Many foreign countries use backpacks similar to Japanese school bags, or handbags, or bags that are both backpack and handbag types. There were also countries such as the U.S., where children go to school empty-handed, and Mexico, where children carry their textbooks by hand.

The "Repurpose school bag" made by "Repurpose" is made from 100% recycled resources and is environmentally friendly. The most unique feature of the bag is the small solar panel attached to the bag. The child only needs to carry the bag to school to generate electricity. Then, when they get home, they can use the electricity stored in the panel to light their way in the dark.

In developing countries, there is a problem that even if a child can go to school, he/she cannot study at night because there is no electricity back home. However, by illuminating their homes with these bags, children can study even at night, thereby expanding the scope of their education. The bags are all colorful and designed to please children. Furthermore, the bags themselves are sturdy and designed to withstand long commutes to school.



Also, "YELO" is a combination of a school bag and a study desk. This item was designed for students in developing countries such as India who attend school in rural areas without electricity and study on the floor. It is also ergonomically designed to help users maintain their posture. It has an LED (Light-Emitting Diode) light that is powered by solar energy and can be used for six to eight hours on a single charge. Prayas Innovation, the maker of the YELO, is providing this item to India free of charge.

YELO bag



Sling Bag /Briefcase



Single Fold Action – School Desk
Comes with Solar LED Table Lamp

BEFORE

AFTER



Spreading donations of school bags to developing countries should be promoted, but it is difficult to donate them because they are expensive and full of memories as a disadvantage. However, some people said that the procedures for donating school bags are cumbersome, so we would like to think about how to deal with this problem. In parallel with this, we wanted to spread the use of bags other than school bags such as "YELO" to children in developing countries who cannot attend school.

According to Prayas Innovation, the YELO Backpack is currently distributed free of charge only to poor children in India. Prayas Innovation said that the bags are currently distributed free of charge only to poor children in India, and that the company would need to

find a sponsor company to help fund the project and to promote it to children in other countries, especially in developing countries.

3 Conclusion

In answer to the research question, I got the idea from bags made for children in developing countries, such as the "YELO backpack" and the "Repurpose use bag," from which I improved the lightness, material, and color of the bag. Some people said that even if the bag can generate electricity, it is dependent on the weather, so if the weather is bad, the bag cannot generate electricity, making it impossible for the students to study.

We will first consider the necessary elements for bag production, and then contact school bag companies in Gunma Prefecture to discuss the production process and negotiate with them for cooperation.

We also need to raise a large amount of funds for the production and distribution of the bags. We are considering the possibility of raising funds through crowdfunding, but we would also like to consider other methods of fundraising. And if possible, we would like to consider institutionalizing the program because we think it is necessary to provide sustainable support to poor children around the world who are unable to receive an education.

When distributing the bags, we would like to distribute them to Afghanistan and other countries where donations of school bags for children are being made but there is currently a shortage, and then distribute them to other countries.

In addition, we also received feedback from people who are willing to donate school bags but feel that it is a hassle to do so.

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Revolution by “Price-Reduced Foods” - "The Reduced" is not Only for Households

Iku Katsuyama, Class 5-1, Number 15

Abstracts

Since I was a small child, I often accompanied my mother on her shopping, and I like to visit supermarkets. Therefore, I decided to do research related to supermarkets.

Supermarkets are often mentioned as a place where "food loss," which is currently a major problem, is generated. Therefore, I thought that if supermarkets could spread their efforts to reduce food loss, it would affect consumers, and food loss reduction could be achieved from both the food retailer's and the consumer's sides. In fact, supermarkets have various regulations regarding sales and problems such as unsold products, and in order to solve these problems, various efforts are being made at each supermarket, such as turning food residues into fertilizer for livestock, improving the image of "price -reduced food," and cooking surplus food and distributing it to local residents. However, the consumer's ingenuity is not enough. However, I was unable to obtain much information on the ingenuity of consumers, so this year I decided to conduct research from the perspective of consumer awareness. In particular, I focused on the existence of "price -reduced food," and came to the conclusion that one solution would be to dispel the negative image of “price -reduced food” and create a positive impression of buying leftovers.

Introduction

Since I was a small child, I often accompanied my mother shopping, and I liked to visit supermarkets. Therefore, I decided to conduct research related to supermarkets. Supermarkets are often mentioned as a place where "food loss," which is currently a major problem, occurs. Therefore, I thought that if I could spread the efforts to reduce food loss from supermarkets, it would serve as a call to action for consumers, and food loss reduction could be achieved from both the food retailer's and the consumer's sides. In last year's research, I learned that supermarkets are taking initiatives such as food recycling and managing expiration and consumption dates with IoT systems. In addition to this, this year I decided to focus on efforts that consumers can make and set this theme.

Means

(Semester 1) I will consult domestic and international literature. The keywords will be focused on "food loss," "supermarkets," "special offerings," and "nutrition education.

(Until around summer vacation) I will contact stores in Japan that are implementing some kind of innovations regarding "price-reduced food" corners, and ask about the contents of the innovations, their intentions, and future prospects.

(2nd semester) I will compare store and consumer attitudes toward "price-reduced food" in other countries with those in Japan, using literature from outside of Japan. Also, think about overall issues and how to solve them by themselves based on interviews, etc.

(Winter break - 3rd semester) I will propose my own ideas to supermarket stores at least in Japan and, if possible, outside of Japan, and ask for their opinions.

Discussion and Implication

First, I looked at the causes of food loss. Supermarkets, convenience stores, and other retailers have a "one-third rule". This is a business practice between wholesalers and retailers that requires wholesalers to deliver products to retailers before the expiration date is less than two months, and it has been pointed out that this has been a major factor in increasing food loss. In addition, one of the things I heard in our interview with the Apita Takasaki store was that damaged products and expired foods and consumption dates are among the causes of food loss. These factors have resulted in food loss of about 1.3 billion tons per year worldwide as of 2017, and about 6.12 million tons per year in Japan alone. The breakdown is 2.84 million tons from households and 3.28 million tons from supermarkets and other stores.

Next, I will state about the efforts of each store to reduce food loss that occurs based on these factors. In terms of product management, for example, there was the introduction of a digital system that sends out notifications when expiration and consumption dates are approaching and when it is time to discount. In addition, each store set up a special corner in the storefront to call for food loss reduction, held price reduction sales at department stores for items such as gifts and brand-name products, which many retailers are reluctant to discount, and participated in food drive activities. In particular, local production for local consumption is very important. By using locally produced food at local stores, not only is food loss reduced, but the producers are also thanked and a better atmosphere is created in the community. In addition, there were some initiatives outside of the stores that were also informative. This is being done by a company called Imagawa Co. in Imagawa City, Kagawa Prefecture. First, in the stores, all perishable foods that are close to their expiration date are

converted into prepared foods. The supermarket's ideal is local production for local consumption, and it also provides vegetables to the Setouchi Zero Yen Kitchen, an event held once a month in which volunteers cook food from surplus ingredients and serve it to local residents. In addition, as of fiscal year 2009, a plan was in the works to combine childcare support with the zero yen Kitchen, and to provide a place where all consumers could participate with the awareness that they are on the side of reducing food loss.

One supermarket that is working to reduce food loss is UNY Co. UNY is engaged in an initiative called the Food Recycling Loop. Under this system, food residues generated in stores are used by farmers as fertilizer, and the crops and livestock grown there are then sold as products in stores again. In addition, as part of its CSR (Corporate Social Responsibility) activities, the company has been weighing the amount of food waste at each discharge site since fiscal 2003. In addition, the company once collaborated with a local university to conduct nutrition education activities. If such dietary education activities could be implemented in stores, I believe it would be possible to spread the movement toward efficient food loss reduction. On its website, "Ecolo Press" also introduced food loss reduction and other environmentally friendly initiatives. As for nutrition education activities in supermarkets, an organization called "Five-a-Day Association" was examined as an example. The main activities there are about the intake of vegetables and fruits.

However, these efforts are the part of supermarkets and are difficult to convey to consumers. When I looked into initiatives that would allow consumers to contribute to the reduction of food loss, the existence of "price -reduced food" caught our attention. The concept of "price -reduced food" is to sell food products that are close to their expiration or consumption dates at a discount. I thought that purchasing "price -reduced food" would not only reduce the amount of food wasted as food loss, but also change the way consumers purchase food if they were only aware of this kind of initiative. However, from our visits to various supermarkets and from Internet postings, I found that the issue of "price -reduced food" and "price -reduced food" corners do not have a very positive image. First of all, since "price -reduced food" are foodstuffs that are close to their expiration date, they have been on display for some time. As a result, many of them have wrinkles on the outer bags or, if they are perishable foods, they are not fresh enough. In addition, the display methods are often cluttered compared to other products, and the height of the display shelves is not high enough to show the products to customers, or the products are often hidden from view. These points

make many consumers reluctant to purchase "price-reduced foods", and if this negative image is fixed, not only will they lose interest in food loss, but also more consumers will be reluctant to buy such products. Here, I would like to focus on the literature from overseas. There have been studies overseas that link food loss and special offers. In the article "Consumer behavior toward price-reduced suboptimal foods in the supermarket and the relation to food waste in households," it was found that consumers who purchase products with price as an important consideration are more likely to purchase suboptimal foods than those who do not. The paper, "Consumer behavior toward price-reduced suboptimal foods in the supermarket and the relation to food waste in households," found that consumers who purchase products on price tend not to waste more food than those who do not and tend to make more optimal food choices. In addition, fewer people in higher income brackets and single-person households place more importance on price, while those who are older and have higher levels of education tend to place more importance on price. This suggests that retailers and governments need to be encouraged to support both the sale of near-expired foods at low prices and their subsequent actual consumption by households. Studies have also been conducted in Japan on the relationship between foregone products and food loss. In their "Analysis of Consumers Purchasing Shared Foods Using POS* Data" (2020), Yuka Yoshida et al. (2020) (*POS:Point Of Sales) found that the most frequently purchased special offerings were those that require little time and effort to prepare, such as prepared foods, cut vegetables, and sushi, and that they are usually eaten and bought when they run out, especially sweet breads and bananas. In many cases, the types of items are sold not only as specials but also at regular prices. In addition, the stores targeted in this study have a large number of customers before 6:00 p.m., and by delaying the timing of discounting after 7:00 p.m., when the number of customers is low, they are also trying to increase the number of products that can be sold at regular prices. This suggests that the items that sell well as special offerings and are expected to be consumed reliably are prepared foods such as prepared foods and sweet breads, and foodstuffs that do not require much time and effort to prepare, such as bananas. The retailers are also responsible for offering discounts at the right time and at the right price.

I would like to introduce some examples of food loss reduction efforts using pop-ups and stickers in Japan. For example, Apita in Keyaki-Walk Maebashi had a relatively large food loss corner with posters and other materials related to food loss. The bright color scheme of the displays gave a pleasant impression. From this, I believe that "fun" is the key to

improving the image of the food-loss corner. In particular, many children may enjoy buying small items little by little with their own pocket money, as if they were in a candy store. Targeting children would also lead to food education at an early stage. In addition, Kagoshima Prefecture has made the existence of discounted products more familiar by offering an initiative in which customers receive points for purchasing food items with a discount sticker, which they can accumulate to exchange for other food items or receive shopping coupons. In addition, a campaign to reduce waste due to expiration dates by taking products from the front of the line, known as "temae-tori," is spreading across the country. In this way, even casual actions by consumers can often make a big difference in reducing food loss. In addition, in order to realize the idea that we make the place fun, it may be effective to make mascot characters which spread information about food-related problems. What I believe is important is to make people aware that they are contributing to the reduction of food loss. Also in order to help children develop this awareness, I have focused on hero and heroine characters. When children see those characters at a supermarket, they can think that buying those foods and thinking about food loss are good things and that they can contribute to society. It can be said to be effective because many countries have characters to help consumers have awareness of food waste.



The picture on the right is "Becky," the mascot character of the Netherlands. In the Netherlands, they emphasize the aspect of food storage. She gives us a lot of useful advice, especially on how to keep food in our house, on YouTube and other media. Pictured on the left is the Hong Kong character. The characters are actually "Big waster" characters, who themselves create a lot of food loss, but in this campaign, they are gradually encouraged by consumers around them to reduce their food loss. In Hong Kong, a large event on food loss was held in 2018, and this character was advertised in various media as part of the event.

Conclusion

Even if we speak of "food loss" in a single word, its occurrence is complicated by various causes, including problems on the part of consumers and problems on the part of retailers. Even though retailers have made major efforts to reduce food loss, consumer behavior has also been cited as a problem in supermarkets, such as taking products from the back of the display shelves, discarding large portions of vegetables, and discarding products as soon as they expire. Reducing the number of items on display in order to reduce losses could also worsen the efficiency of that store and lead to a decline in its reputation. What we can do now is to continue to keep "consumer awareness" high. In addition, I would like supermarkets and other retail outlets to consider flexible measures to eliminate large-scale disposal, such as recycling as fertilizer or giving food that cannot be sold but is still edible enough to be given to nearby facilities for school children, as well as periodic review and relaxation of regulations, in order to eliminate large-scale disposal. I would like you to consider such measures.

With these things in mind, I conclude in this way. When we focus on upgrading the "price-reduced corner", the system in which supermarkets can act centrally and actively. It means retailers, which is an association that knows about the actual situation very well, are able to play an important role. The important point here is that "supermarkets will play a central role. They should do a lot of activities like regulation of food recycling, and advertising including making mascot characters, and at the same time, by calling for local administration to support them, the action will spread widely and as a result, it will be a world-wide activity. Problems that arise in this process, such as supermarket labor shortages and inventory adjustment errors, can be solved more easily through collaboration among the various supermarkets. In this sustainable system, we probably connect the spirit of nutrition education, and then, reduction of food waste will be able to be realized.

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(2023.1.21)

A Small Library Delivering Learning

~The Contribution to Improve the Rate of Literacy~

5116 Konishi Misuzu

Abstract

Now in the world, there are about 750 million children who are illiterate. It means a lot of children can't read words. There are various problems caused by illiteracy, and I thought I wanted to do something for those children. That is because I felt the importance of breaking through the current situation that children who were about the same age as me were not given the opportunity to learn. Pictures are a good tool that people all over the world can understand without languages. Therefore I use picture books in my study.

While the main proposition of mobile libraries may not be effective in the long run, the primary aim of this study is to help children who are illiterate. I also want to create an opportunity to notice the joy of learning. There are some conclusions from this study. First, the introduction of mobile libraries to contribute to increasing literacy. Second is to reuse temporary housings to create living bases for volunteers, mainly in poorer countries. However, I found additional problems so I need to work out solutions even more.

1. Introduction

Because they are illiterate, they sometimes get into dangerous areas without reading the notice which warns them not to enter and they are involved in accidents. In addition they cannot get stable jobs and their lifestyles become unstable.

Currently there are a lot of activities in developing countries and I was interested in one example, which was named "Shanti Volunteer Association". This group sent mobile libraries to Myanmar and they ran them there. To refer to this precedent in my study I adopted the way of using mobile libraries.

2. Discussion and implications



<https://globe.asahi.com/article/11730610>

To look into supporting picture books, I found out that a project by NPO to send 2,000 "picture books without words" to Cambodia was carried out in the past. Children who cannot read words are the main targets. Therefore it is important for them to listen to words they know and associate them with words. In many areas, picture books are used as part of early childhood education,

and storytelling or reading picture books when brain development is remarkable is very useful for brain development and they can learn many things.

However, it is difficult for illiterate children to understand picture books by connecting words and illustrations without people who read the book for children and the current problem is how to recruit readers. If the meaning of the words written in some notices cannot be recognized visually, there is a possibility of getting involved in an accident without understanding the notices. To do this, they need to be able to read as well as listen and speak. This is also necessary for getting a stable job. Therefore, in this program, it is necessary to write the words in the picture book in the local language, or in several languages if the mobile library goes around several countries.

The issue is “who translates the words into the local languages in the picture book”. Because I intend to do this activity as a volunteer work, I cannot afford to spend a large amount of money, and it is necessary to consider the source of the money and the method of donation. Looking at the official languages of the countries with the lowest literacy rates, Benin is French, Senegal is French (some people use other languages), and Bangladesh is English. I worried that there were few people in Japan who majored in and studied the official language of the country where I wanted to run the mobile library, but it turned out that popular languages such as English and French in these countries. Since many Japanese students are majoring in these languages, it is expected that the number of participants will increase. In addition to recruiting people who will translate the texts for such people, I would like to recruit volunteers such as reading picture books on site.

However, given the current situation of the shortage of local teachers, it is quite difficult to gather volunteers. Since it is necessary to create an activity base such as a house for volunteer participants, I would like to propose the construction of temporary housing on site. We would like to increase the number of participants by preparing a place for local activities. For the first step, it will need funds and personnel.



<https://sva.or.jp/wp/?p=12808> Shanti Volunteer Association

Among the information gathering, there was a project that an organization called Shanti International Volunteer Association makes picture books and delivers them to children in Asia. In most of the previous projects, instead of drawing pictures and making a book from scratch, the work was to put a translation sticker on an existing picture book. The problem raised by this volunteer association that we used as a reference is the aging of volunteer participants and the shortage of manpower.

3.Conclusion

I found it important to think of ways to increase the number of volunteers who can participate from home. As one of the activities that attracts the interest of young people, the story, illustration creation, and text translation are all done by hand to create a completely original picture book. Also, if volunteers produce a book, it is necessary to print it as a paper medium. Therefore, I am thinking of collaborating with a Japanese publishing company to create books and sell good picture books to the general public in Japan as a source of income. Funds obtained from general sales can be used for the necessary funds for this research. Under this plan, publishers are to cooperate with charity activities, so they will be advertised by the publishers with positive status such as "I cooperate with such charity activities". If the book sells, the publisher will make a profit. Therefore, working with publishers is mutually beneficial. However, I suspect that sales of picture books cannot reach the necessary funds, so online donations will also be necessary.

As mentioned before, the shortage of local labor is currently a problem, and there are areas where there are no teachers even though schools and other facilities. Therefore, the first thing I should focus on is resolving the labor shortage. One factor behind the labor shortage is the lack of volunteer activities. Then I propose the reuse of temporary housing. The temporary housing will be used as a living base for volunteers and as a small library (For example, it will be put on next to an elementary school). This plan can realize efficient recycling without the cost of disposal.

However, even with this plan, various costs such as the costs of carrying temporary housings to the site, and they cannot be used for a long time.



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Establishment of circular online learning

~Toward a world where every child in the world can learn~

5117 Kei Kondo

Abstract

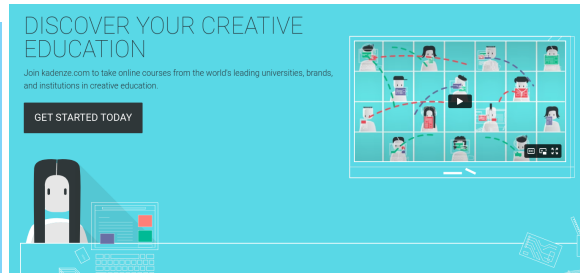
Online learning is now becoming popular in China, the U.S., and other countries, and we can have a positive impact on the world by searching for higher quality online learning. It is also necessary to think in terms of internet devices and wi-fi environment equipment. Japan has developed ICT technology, and we need to make use of it in the world.

1 Introduction


I knew that the overall level of achievement of middle and high school students was decreasing these days, and I wanted to achieve the SDGs' "4 quality education". I have a video-based online learning system that I find very convenient and easy to use, and I thought it should be popularized. I have also wondered if online learning could be used for school classes and have been thinking about whether online learning should be used. Last year, we spent a year researching the theme of "Current Status and Problems of Online Learning," but found that online learning in Japan is hardly popular, and we are unable to draw conclusions about what we should do in the future, because we would like to consider ways to achieve cyclical online learning in order to achieve high quality online learning in the future.

2 Discussion and implications

An e-learning system is an information system for e-learning and generally consists of "teaching and learning materials" and "learning control system". The term "e-learning" by itself, not including the system, may also mean an information system for e-learning. The users of an e-learning system are expected to be learners and teachers, and the functions for learners and for teachers are different. Many e-learning systems have a "system manager" who supports the learning and teaching activities of the system. The minimum necessary elements for an e-learning system are "teaching and learning materials" and learners, which can be seen in a self-learning system. A special example of a self-learning system is the use of a trial tutorial function. Tutorials are intended to allow users to learn how to use the program by following on-screen instructions and performing other tasks.



The learning control system in an e-learning system manages the storage and archiving of teaching and learning materials by teachers and others, the appropriate delivery of teaching and learning materials to learners, and learners' learning histories and results of quizzes, drills, and exam questions in an organized manner. Learning control systems are used to help track the results of large numbers of students. Learning control systems are used as an effective means of providing an education in place of or in addition to interview-based classes in schools, and for providing education to employees in companies. The learning control system also functions as a learning site for learners, who login from the learning control system to perform a whole set of actions, such as learning and exams. As a complement to the learning control system, an online information board for communication between teachers and students is often provided as a function of the learning control system.



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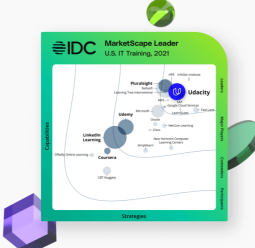
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HTML: [tags](#), [attributes](#), [characters](#).

3 Conclusion

I have considered how to solve the problem. First is to create a wi-fi environment. One reason why online learning is not popular is the Internet environment, which is the reason why we have developed this method. I think it is important to make it possible to hold classes even when the environment is bad. Second, the government and the local government distribute to the students what they need for their classes. We do not have what is necessary for online learning to be able to allow all students to take part in the class. I want to create value in new learning styles by introducing new ideas and technologies to online learning and make an impressive difference in society.

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Declining Malnutrition in Insect Food

~Help for developing countries children~

5118 Saito you

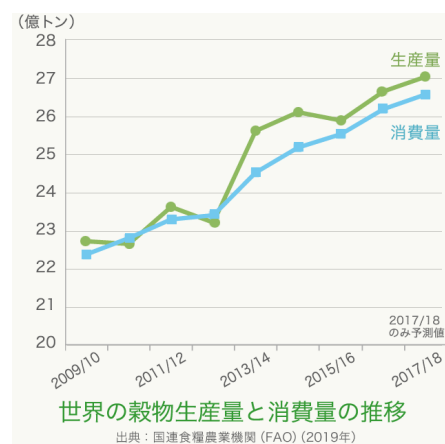
Abstract

Many people in the world are starving. To solve this problem, food must be continuously supplied to areas with large numbers of hungry people. However, due to local climate and other problems, crops may not grow. Therefore, we came up with the idea of producing insect foods in the region, which can be mass-produced and are inexpensive.

1 Introduction

○Research background and purpose

According to the Food and Agriculture Organization of the United Nations, there are more than 2.6 billion tons of food produced from grains alone worldwide, enough food to feed the entire human population of the world. In reality, however, one out of every 10 people suffers from hunger. In the long term, the percentage has been gradually decreasing from 14.5% in 2005, but has started to rise since 2016. Furthermore, due to the Corona crisis, the number of people who are hungry has increased by more than 100 million compared to 2019, which means that 10.4% of the world's population, or 1 in 10 people, are hungry. By region, Asia has the highest number of hungry people at 418 million, while Africa is the most severely affected at 21%, and approximately 690 million people worldwide do not have enough food to eat. One in 11 people in the world suffers from hunger.



This is not due to a lack of food. As shown in the figure on the right, the world produces about 2.6 billion tons of grain each year, which, if distributed evenly among the world's 7.7 billion people, would mean that each person could eat more than 340 kilograms of grain per year. This is far more than what the Japanese eat. Why, then, is there such a large number of hungry people? It is because the local climate limits the types of crops that can be grown. Therefore, in order to achieve a sustainable supply, we thought that an entomophagy diet would be the best solution, regardless of the local high nutritional value resources and agricultural products.

○Status of previous research

According to Kitty Verhoeckx, who has studied insect diets, most of the research on insect allergy has focused on occupational or inhalant allergies. Therefore, research on the safety of insect foods, including their allergenic properties, is very important.

○Previous research

- The value of modern insect food Mizuno
- History of insect food Ryu, Kazuko

Grasshopper, cricket, bee, ant, caterpillar Introducing the history of insect food from prehistoric times to the present day and traditional insect food in countries around the world . We will also explain the breeding business of edible insects in anticipation of future food shortages. With recipes using various insects. Winner of the André Simon Award for the best books on food and wine.

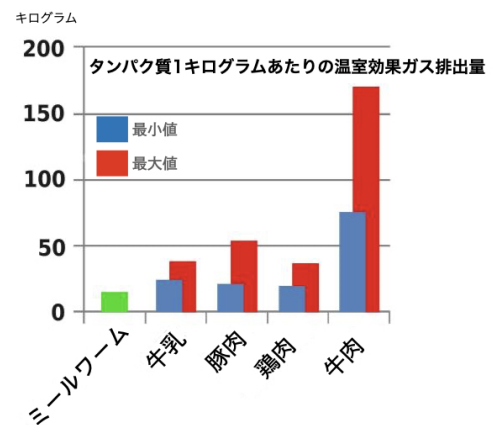
○ **Research method**
using the Internet

① Contents of going to talk to the people of the lantern house Tips to make it easier to eat insects Why did you decide to eat insects? If you can't go to see him, contact him by G-mail, etc.

② Go to Torosha here is a store at 97 Ogo-cho, Gunma Prefecture (confectionery store/general store). is. improvement points by having people actually eat products containing insects at Totosha

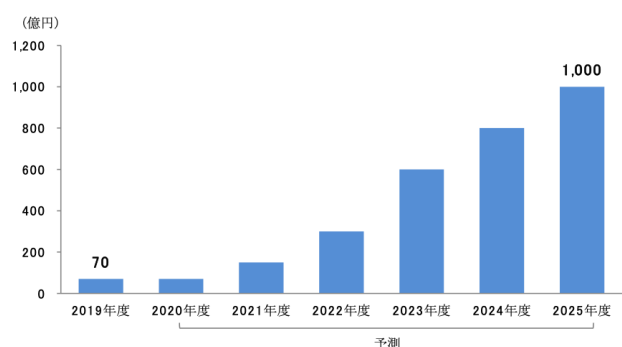
2 Discussion and implications

First of all, there are about 690 million people in the world who do not have enough to eat. That is equivalent to one in ten people in the world suffering from hunger. But it is not because there is not enough food. Every year, the world produces about 2.6 billion tons of grain. If this were distributed equally among the world's 7.7 billion people, each person would eat more than 340 kilograms per year. Japanese actually eat 154 kilograms of grain per year. Considering that the world produces vegetables in addition to grains, and that there are stocks, enough food is produced to feed everyone. However, considering the reality that many people are currently food insecure, I felt that I had to take some action.



However, while researching insect food, I learned that insect food is a kind of superfood. In fact, there is data that more than a quarter of the world's total population of 7.5 billion people, about 2 billion people, eat more than 1,900 species of insects. The on the right, graph Entomophagy is a great food for developing countries. However, it turns out that there are not many transactions of insect food. Next, we investigated the breeding method of insects, which is the material for making insect food.

The biggest obstacle to getting insects to eat is stereotypes. This is because if you eat insects before actually eating insect food, you can get



protein efficiently, and if you take the same amount of protein with beef, you will take many times more carbon dioxide and production area, so it is environmentally friendly. I told them, but some people couldn't eat. Even though I had researched this much and understood in my head that it was good for the environment, I was a little reluctant to eat it.

3, Conclusion

that the biggest obstacle to the spread of eating insects is stereotypes, I think it's hard to erase this because it's a human heart. Therefore, the future prospect is to popularize eating insects on the Internet. For example Line, Twitter, Facebook, etc. Here, I thought that I could popularize eating insects in developing countries by doing the following.

- Because there are places where the Internet is not widely used, developing countries should be the first step.
- Commercialize the appeal of insect food, process the appearance, commercialize it, and use commercials to have celebrities review it.
- Popularize insect food. We will simulate how much the hunger population can be expected to decrease, and present it on posters, SNS, etc.
- Connect it to food loss. Used as food for insects to grow.

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To Make People Full with Street Food

~Toward Zero Hunger with Familiar and Easy Food Stall Dishes~

5120 Nana Sugimoto

Abstract

To solve the hunger problem in Africa, which suffers from hunger, we operate food stalls in Europe and donate the sales to the starving areas. I would like to propose a method of using food stalls. In this study, I set up three pillars and research this problem along these pillars.

The first is what meal should be served. I'm going to serve a local dish which is eaten in Africa. The second is about the form of the food stalls to be used. The third is to employ people living in Europe to operate the food stalls, and to produce the ingredients used in the food stalls in Africa. I plan to use part of the sales from running the stalls to pay the salaries of food producers and to solve the problems facing Africa. Capital will be collected from all over the world through crowdfunding.

I would like to apply this method not only in Africa but also in other countries to save people suffering from hunger around the world.

1 Introduction

Foreign stalls have gotten attention recently. All of the food stalls overseas are unique, and the dishes that use ingredients that are rarely seen in Japan are very attractive. I think the advantages of such stalls are "familiarity" and "easiness". I thought that it would be possible to make use of these strengths and lead to the improvement of the world's poverty problem. There are many people in the world who are suffering from poverty. The problem of poverty leads to various problems. In this research, we aim to realize a plan to sell dishes using ingredients produced in regions suffering from hunger in developed countries and pass the profits to poor regions. I would like to improve not only the hunger problem but also the food waste problem likewise by using leftover ingredients in the dishes we provide.

Currently, the world produces about 1.3 billion tons of food waste, which is one-third of the food production. However, the total amount of food produced in the whole world is enough to feed all the people of the world satisfactorily. In order to reduce this wasteful food

waste, I would like to contribute to the creation of an environment where people around the world can eat satisfactorily by consuming food at food stalls.

Currently, the Japanese government has provided assistance to address hunger and poverty twice through the WFP(World Food Programme) as an initiative to address the hunger problem. The first was food assistance to 27 countries including Asia in 2015, totaling 122.62 million dollars of contributions. This year as well, many countries around the world were in dire need of food aid, so we sent aid funds to various countries in Asia, Africa, and the Middle East. It also provided emergency food assistance to displaced persons affected by the conflict, provision of school meals to children, and delivery of food to malnourished children. Also in 2019, a second aid was provided, contributing \$69 million, which was also sent to support 28 countries in Asia, Africa and the Middle East. In the second round of assistance, in addition to providing food and nutrition assistance to conflict-affected areas and areas suffering from food shortages, we also assisted in building disaster-resilient communities in areas affected by climate change, assisted reconstruction, and provided assistance to poor families. It is also used to help people break out of a vicious circle.

The research question is, "While considering not only the hunger problem but also the food loss problem, what kind of food should be served at food stalls and how should they be managed as a solution to poverty in starving areas?"

As a research method, we mainly use the Internet for research. The sites used for the survey include the websites of public institutions such as the Ministry of Agriculture, Forestry and Fisheries and UNICEF, and the websites operated by people who are engaged in solving hunger problems overseas. Internet surveys will be conducted throughout the year. In addition, I would like to conduct interviews with groups and companies related to food stall management and overseas hunger and food loss issues. Because it was determined that it would be difficult to travel to the site by foot due to the Corona disaster, interviews will be conducted using the contact information and inquiry forms provided on the websites of the interviewees. However, since it is not sufficient to gather information solely from the Internet, we believe it is necessary to conduct literature searches as needed.

2 Main article

There are about 7 billion people in the world and the number of them is increasing every year. More than 840 million of them are in trouble because they cannot eat satisfactorily. This is largely due to poverty in starving areas. This research has been carried out in order to solve such a severe current condition. There are many regions in the world suffering from hunger,

and in order to reduce the number of people suffering from hunger to zero in the future, we believe that it is necessary to first focus on regions where the damage of hunger is particularly severe. Therefore, I decided to proceed with my research by focusing on the African region, where the damage of hunger is the most serious in the world. When I first started my research, I was thinking of running food stalls in famine areas and actually providing them with food. There are problems such as whether it is possible to buy food, and whether it is possible to raise enough sales for labor costs and stall management if it is operated in a developing country instead of a developed country. As a second plan, I decided to create a system in which food stalls produced in starving regions would be used to operate food stalls in developed countries such as Europe, and the profits from these stalls would be used in starving regions.

Three axes were created to think about in advancing this research. The first is the food they serve, the second is what kind of stalls they use, and the third is how they operate this project.

As for the first dish, I would like to offer the local cuisine of starving areas in developed countries. Initially, they tried to serve dishes familiar to developed countries using ingredients produced in Africa. However, I thought that by providing the local cuisine of the famine area, I could create an opportunity to learn about the famine area, and I could make dishes that make full use of the food produced in the famine area. Also, in developed countries such as Europe, African cuisine is unfamiliar, so it can create a topic. I would like to serve the local cuisine of an African country that is particularly suffering from severe hunger. Uganda, for example, suffers from severe hunger, with a high 35% of the population undernourished. There is a dish called "Rolex" as such a local dish of Uganda. This dish is a Spanish omelet (fried egg with vegetables) wrapped in a crepe-like chapati. This dish is easy to eat and easy to arrange, so it is quite suitable as a dish to be provided in this research. In addition, we would like to keep the cost of the food used at that time as low as possible and consider food waste, which is one of the major issues in the world today. I'm thinking of making use of it too.

As for the second item, the stalls that will be used, we will use ones that are easy to move. I think that European stalls will use mobile stalls that are similar to food trucks. Advantages of using food stalls include low initial and operating costs, and the ability to easily change locations. If you want to have a store, it will cost a lot of money just for initial costs such as land and building costs. On top of that, there are utility bills, water bills, etc., so it becomes a huge burden in terms of cost. However, the initial cost required for a food stall is

much cheaper than running a store, including the cost of the food stall and the cost of the land. In Japan, the initial cost of running a store is said to be 7-12 million yen. On the other hand, the initial cost of a stall is 2.5 to 3 million yen, which is quite reasonable compared to running a store. In addition, even if the sales are not good in the land, it is easy to apply because the sales place can be easily moved.

At the moment, we are thinking about the third method of operation, which is to hire people who live in Europe to run the stalls, and to produce the ingredients for the street food in Africa. I plan to use part of the sales from running the stalls to pay the salaries of food producers and to solve the problems facing Africa. Capital will be collected from all over the world through crowdfunding.

Through this research, my ultimate goal is to provide financial assistance to regions suffering from hunger.

3 Conclusion

The goal is to solve hunger in Africa, where many people suffer from hunger. The final proposal is to use ingredients produced in Africa and surplus food in the world to serve local dishes familiar to Africa at stalls operated in Europe.





← Chapati

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Delivering happiness with educational support

~Aiming for the sustainability of education and support companies~

5121 Yukina Soya

Abstract

Today, there are a lot of children who cannot receive an education, and the enrollment gaps between developing and developed countries are huge. In order to increase the number of children who can attend school, it is necessary to change the minds of those who do not know the importance of education and to provide effective educational support. My suggestion is to build a “Delivering letter system” that students in a developed country and children in a developing country send letters to each other through companies which provide educational support. The purpose of my suggestion is to have students understand the situation of education and to realize sustainable educational support.

I think supporting children is not only delivering happiness to them, but also solving their future. I want a world where all children have equal access to education.

1 Introduction

There are a lot of children who cannot receive an education. I think we have to change the present condition so I set up a question "What is needed for children in countries with low school enrollment rates to receive a better education?" and conducted research to think about the solution.

2 Discussion and implications

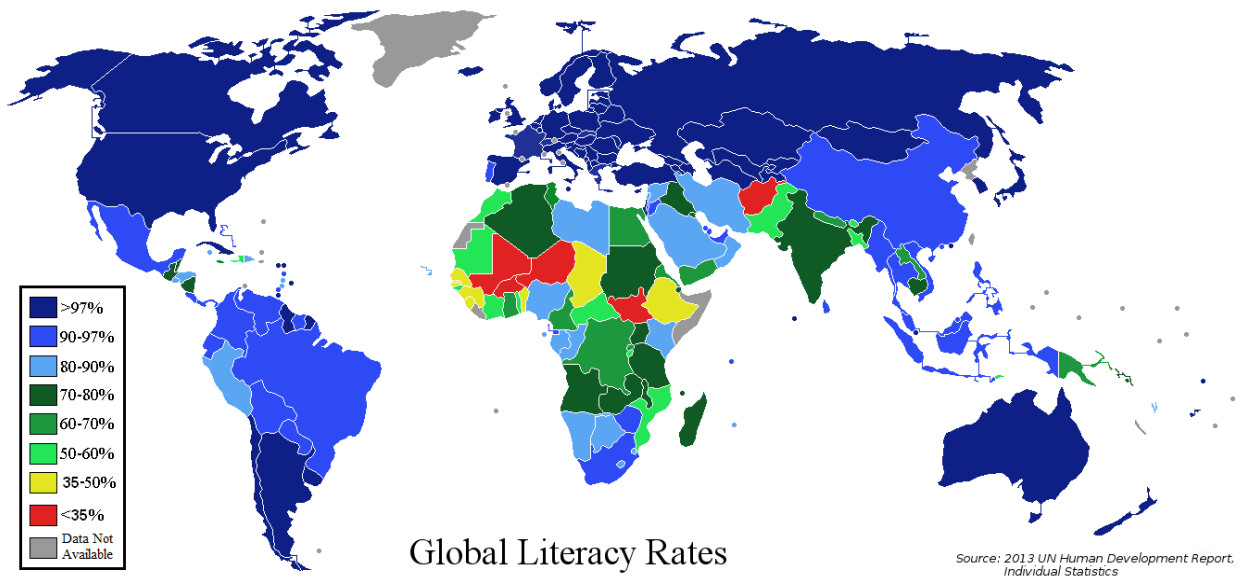
As we can see from chart 1, the global literacy rate is below 90%, mainly in South Asia, West Asia, and Africa. According to UNESCO, the literacy rate is the ratio of the estimated adult literacy rate to the adult population (ages 15 and over), expressed as a percentage. Also, literacy is the ability to understand, read and write simple and short sentences used in daily life. Moreover, from chart 2, the number of children out of school is also lower in areas with lower literacy rates. The number of children out of secondary school is the highest in Sub-Saharan Africa. The figures are also high in South Africa, West Africa and North Africa. In similar areas, the number of children who cannot attend primary school is also high. Based on what we can see from the two charts (chart1 and 2), it can be seen that

the high number of children who cannot attend school is related to the low literacy rate of the country.

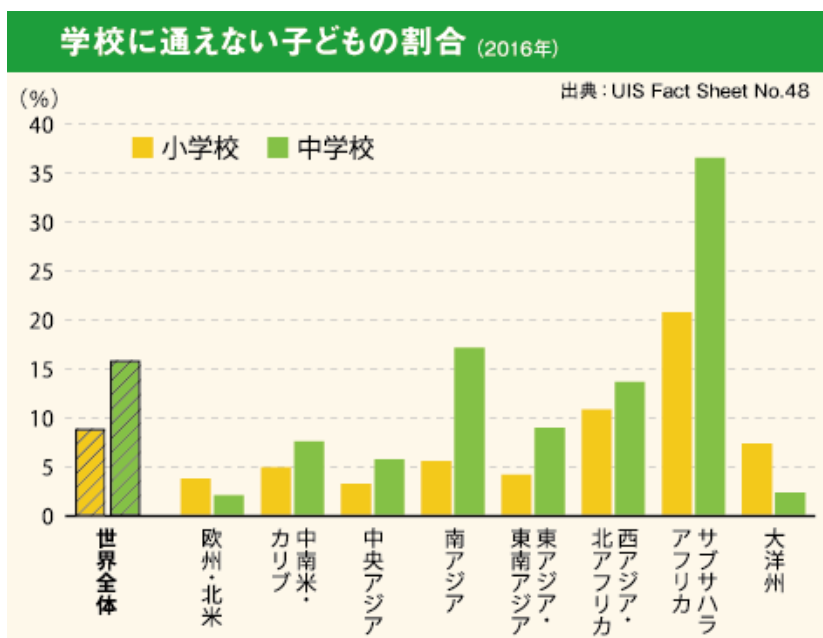
A low literacy rate causes various problems. For example inability to avoid personal danger, shortage of professional occupations, and difficulty in escaping poverty. First is the dangers of being illiterate. If a person who cannot read and understand words tries to go to a dangerous area, even if there is a sign saying "dangerous", he or she will enter a place without understanding it, and danger might come. Second is damage caused by labor shortage. People who cannot read and write characters have a limited range of jobs. The lack of quality education prevents them from getting jobs that require high skills, which is the cause of the shortage of human resources. Therefore, in countries where the educational environment is not sufficiently prepared, the shortage of specialists such as doctors and nurses has become a problem. Third is poverty from low education. Children from poor families cannot afford to get an education. Furthermore, as mentioned above, it is almost impossible for children who have not received an education to get a high-paying professional job. The child remains poor because he/she cannot find high-paying jobs as adults. And in many cases it is very difficult for the family to get out of poverty completely. Although it is not shown in the chart 2, there are quite a few people who drop out of school without being able to graduate, even if they were able to attend school at the appropriate age. Many of them are due to family labor shortages and poverty.

An education is a basic right that all people have equally. If we can create an environment in which everyone can receive an education equally, it will lead not only to the improvement of academic ability around the world, but also to an increase in the number of human resources who can play an active role in the world. In addition, by receiving a fulfilling education and obtaining the necessary knowledge, it will lead to the solution of problems such as poverty, gender, disability, ethnic and language disparities and discrimination. There are several reasons for the low school enrollment rates. One is due to conflict and disaster. As can be seen chart 3, children living in conflict and disaster-affected countries are out of school at a higher rate than those living in other countries. The percentage of children out of primary school in those countries is more than double the world average. The percentage of children without secondary education in those countries is also higher than the world average. Second is poverty. Poverty is linked across generations. Therefore, children who are unable to receive an education due to poverty will remain poor even when they become adults in the future. Educational inequality leads to economic inequality in adulthood. For example, in Japan, about 75% of children from ordinary

households go to university, whereas only about 35% of children from poor households (households receiving public assistance) go to university. In Japan, which is a developed country, there is a disparity in the rate of advancement to universities that are not compulsory education. This disparity will directly lead to economic disparities in the future, as those who cannot attend university cannot obtain professional occupations. From these circumstances, it is easy to imagine that the situation is even worse in developing countries with low enrollment rates. Third is low interest in education. The low enrollment rate comes from the family's awareness of education. First, children born to uneducated parents are often unable to receive education because their parents do not know the need for education. In this case, parents have the advantage of having their children help with household chores. So the chain of out-of-school children in the family line does not stop.



【Chart1】 Global Literacy Rates



【Chart2】 The number of children out of school

Percentage of out-of-school children and young people globally, and in countries affected by conflict and disaster

	Global Average (%)	Average of Emergency Countries (%)
Primary	8.9	20.0
Lower Secondary	15.9	29.3
Upper Secondary	36.3	43.8

Source: Calculation based on UNESCO Institute for Statistics database (2018), UNICEF Education database (2018), and a list of countries where UNICEF has a humanitarian appeal – considered emergency countries/ countries affected by conflict or disaster.
Note: Data does not include Libya, Somalia and Madagascar due to data unavailability. Averages are weighted based on relevant school-age population.

【Chart3】 Percentage of out-of-school children and young people globally, and in countries affected by conflict and disaster

3 Conclusion

In conclusion, my suggestion is to build a “Delivering letter system” that students in a developed country and children in a developing country send letters to each other through companies which provide educational support. The purpose of my suggestion is to have students understand the situation of education and to realize sustainable educational support. Future challenges are specific companies, funds, and methods.

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To Reduce the Starving People

~With Smart Agriculture~

5122 Toshima Natsuki

Abstract

The starving people in the world are increasing year by year. Then, I found an agriculture called smart agriculture using AI or advanced technology, and decided to research it. The advantage of smart agriculture is that it can reduce the physical fatigue of farmers and promote labor saving and efficiency. On the other hand, the disadvantages of smart agriculture are that it costs a lot of money to introduce equipment and that it requires training of human resources. To solve this problem, I decided to refer to smart farming companies in other countries. First, I thought that commercialization of smart agriculture would reduce the introduction cost, and I also wanted to refer to the methods other than the smart agriculture currently being used in Japan. The conclusion at this stage is to first commercialize smart agriculture, and then, after commercialization, the company will develop human resources.

1 Introduction

I have been researching agriculture for 4 years, and I am thinking of making it an agriculture-related research theme again this year. I thought it would be possible to conduct research on a theme that combined the starving population, and set it up. Therefore, when I was collecting information, I found agriculture called smart agriculture. Smart agriculture is farming using IoT technology. Specific examples include spraying pesticides using drones, checking crop diseases, and growing plants using LED lights inside buildings. I thought that the technology could be used to reduce the number of hungry people who have been increasing recently. In Japan, the number of Japanese farmers is decreasing year by year, and the population is aging. In such a situation, even a small number of people can use machines and AI to efficiently farm. In addition, the number of people engaged in agriculture tends to increase globally. I thought that if the number of people who practice smart agriculture increases, the number of people with various skills will increase and the work will proceed more efficiently, and the workers will be able to teach each other without increasing the number of training sessions. In this way, I would like to carry out research with the aim of reducing the starving population by making up for the shortage of food by utilizing smart agriculture.

2 Discussion and implications

United Nations 2019, the increase of 10 million from the previous year, an increase of nearly 60 million over the past five years. Since the world's population has been increasing since around 1950, it is expected that the number of people suffering from hunger and malnutrition will continue to increase if this trend continues. In addition, as the population increases, places to live will be limited, and rice fields and fields that have been used for agriculture will eventually become residential areas. Therefore, I started this research to see if I could reduce the number of people suffering from hunger and malnutrition by looking at "smart agriculture" using AI and advanced technology.

The advantages of smart agriculture are increased production volume due to labor saving, reduced burden on the body, promotion of organic farming and cultivation with reduced pesticides, and the ability to convert agricultural know-how into data. Since robots play an active role in smart agriculture, they will be able to do jobs that humans could not do before, and production may increase. Also, multiple tasks can be performed at the same time. The number of workers can also be reduced, and labor costs can be reduced. Reducing the burden on the body means that work will be automated by technology, so that humans will no longer have to do hard or dangerous work. Using AI technology, it is possible to spray pesticides with pinpoint accuracy and analyze insect damage with images. During the summer vacation, I watched a video of smart farming using drones, and found that pesticides were able to be applied to details that are difficult for humans to enter. In the United States, an agricultural powerhouse, smart agriculture called AgTech is being promoted. AgTech mainly uses drones for agriculture. It collects a variety of data such as pesticide spraying and the growth of crops and soil conditions from the air, and is useful for analyzing farmland conditions. Also, at a company called FamLogs, it seems that by analyzing the conditions of soil and crops collected from satellite images, robots directly advise farmers on the appropriate amount of crops to be planted and the amount of fertilizer to match the condition of the soil. . I would like to proceed with my research while referring to such smart farming companies.

In the future, I would like to introduce it mainly in areas where the food self-sufficiency rate is low and the starving population is very large. In addition, by introducing smart agriculture even in countries where the self-sufficiency rate is not very low, it may be possible to further increase food production and export it to developing countries

and countries with food shortages at lower prices than now.

However, there are also disadvantages. These include the high cost of introduction, the need to train smart farmers, and the possibility that introduction will become a new burden on farmers. It is true that labor costs can be reduced, but it is expected that the introduction cost will exceed the sales of what is harvested. Specifically, it costs 200 million yen when using sunlight, and 300 million yen or more for a completely closed type. Also, even if it is possible to introduce it, it may not be used well and may be abandoned, or when it breaks down, the cost of repairing it will be charged separately. Also, as farmers are aging, even if smart agriculture is introduced, there may be few people who can immediately introduce it. It's difficult for people who aren't used to it because you'll be dealing with a lot of equipment. However, if we can solve such problems even a little, we can spread smart agriculture more than before, increase the production of crops, and reduce the number of people who are malnourished. I'm thinking of giving training to the younger generation and thinking about commercializing smart agriculture. However, the current issue is that while smart agriculture requires fewer workers, in developing countries there are far more people who want to work to earn a living than in developed countries. I would like to come up with a solution to eliminate this contradiction.

3 Conclusion

The conclusion is to provide training for those who implement smart agriculture and to commercialize smart agriculture. This figure was created based on data provided by the Ministry of Agriculture, Forestry and Fisheries, and it can be seen that the number of people working in agriculture, which is said to be on the decline in Japan, is increasing. From this, I thought that the people who implement smart agriculture need not be limited to a small number of elderly people, so I think that the training should be aimed at all farmers. In the future, I would like to investigate and think about the specific equipment to be introduced. Right now, I'm thinking about farming that uses AI and plant factories that can be built in buildings in areas where farmland is small but still wants to farm. This means checking to see if it is spreading. I also think it is possible to harvest using an unmanned tractor. Also, there are not so many in Japan yet, but there are many smart agriculture companies around the world, so I would like to create more companies based on those companies, create competition, and reduce the cost of equipment and factories. Ultimately, we will introduce smart agriculture to countries with food shortages and starving populations to increase food

self-sufficiency and reduce the number of hungry people. I think it would be good if we could increase production and export to countries in need at a lower price.

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How to Eliminate Discrimination through Sports

~Can Basketball Eliminate Discrimination?~

5123 Atsuki Nakajima

Abstract

The conclusion of my research is to organize a "World Exchange Basketball Festival". The purpose of this event is to promote exchange with people of other nationalities and races through basketball, and to eliminate prejudice against people of other nationalities. The reason why we decided to hold such an event is that we have researched why people are racist and found that it is often because of "prejudice". In recent years, there has been a lot of talk about Japanese players entering the NBA, and I believe that the relationship between Japan and the NBA has become closer. For example, an NBA player built a permanent basketball court in Japan, and friendly games are held in Japan in the form of the Japan Games. Therefore, we would like to invite Japanese players who are active in the NBA, etc. to this festival as guests.

1 Introduction

I have chosen this research theme because I think that I can solve the "discrimination problem," which has developed into a global problem, by using my hobby, basketball. When one thinks of basketball, many people may not think of the NBA, etc. In the NBA, many black players, white players, and recently, yellow players are also seen playing. I would like to conduct research on racial discrimination in team sports where many races come together, including how it occurs and what movements are in place to improve it. The purpose of this research is enormous, such as eliminating "discrimination," but first of all, it is to help people around the world understand the current state of discrimination. There are probably some people in the world who are participating in discrimination movements without understanding the meaning. Our goal is to make as many people as possible, including such people, aware of and think about the current situation.

2 Discussion and implication

In August 2020, a black man was shot and killed in the United States. In response, the NBA team, the Bucks, boycotted NBA Game 5. The Bucks boycotted the game, stating that they had "more important things to do than basketball.

LeBron James of the Los Angeles Lakers tweeted on his Twitter page that the current situation should be changed.

Now let's talk about why racism happens. In the research summary, I mentioned that racism occurs due to "prejudice," but to be more precise, racism occurs due to the remnants of black slavery. These laws prohibited blacks from using public facilities, marrying, having sex with, eating with, or dating blacks and whites, and in some cases fined those who broke the laws. We wonder how such prejudice can be eliminated, but it would be impossible to wipe out prejudice from what has become law. Therefore, I think that if we can prevent the prejudice against blacks from being instilled in the children who will be born in the future, prejudice against blacks will gradually decrease, and this will lead to a decrease in racial discrimination.

Therefore, I thought that if I could integrate sports, I could dispel prejudice against other races. Let me explain why I am organizing the festival. What I felt from my experience in sports is that sports can connect us with strangers. This is true even if we speak different languages. That is why I propose this festival.

3 Conclusion

So I propose to organize a "World Exchange Basketball Fest". This is a 5x5 basketball game. First, divide the leagues by age groups.

(1) Elementary school teams

6-12 years old, minibus court, 6 minutes x 4 (1.5.1 break time)

② Junior High School Team

12-15 years old Regular court 8 minutes x 4 (2.10.2 break time)

High School Team

15-18 years old 10 minutes x 4 (2.10.2 break time)

④ Competitors' Teams

18 years old and up Regular court, same playing time as high school team

Senior teams will not be created because we thought it would not be in line with our objectives.

Points to note

Unify the racial ratio (no majority of Japanese, etc.)

Provide hand signs (since they can't communicate in their own language)

Or unify the signing into English (high school students and above)

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Remnants of Black Slavery

Jim Crow Laws "All persons of mixed Negro blood are considered Negroes."

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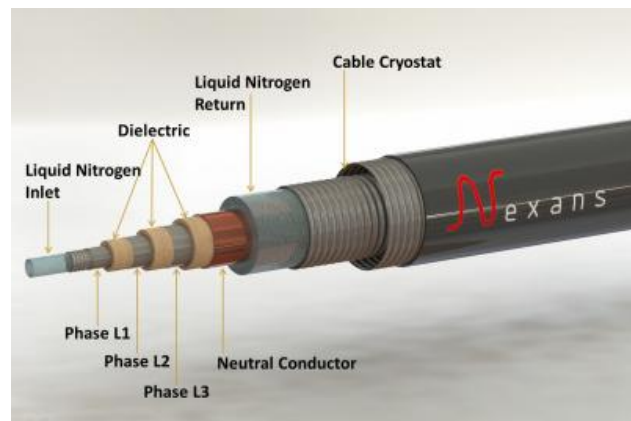
Efficient power supply with Superconducting Technology

- Construction of a stable and environmentally friendly e-power transportation system -

5124 Nishida Kaisei

Abstract

A summary of the results of this research indicates that it is technically possible to develop a superconducting cable¹ that does not cause loss during power transmission, and that the benefit from using it clearly exceeds the installation and maintenance costs. Based on the current situation in each region, I also devised a framework for the introduction of superconducting cables that transcends regions and is beneficial to the entire planet.



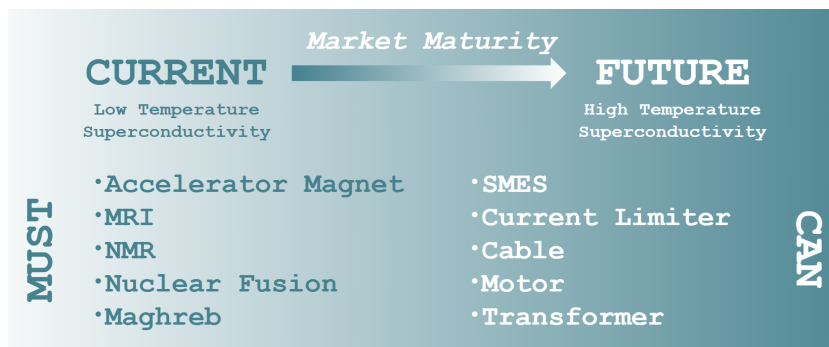
A disadvantage of superconducting cables is that they require continuous investment of a large amount of money because the cables themselves must always be cooled to an ultra-low temperature. However, if this problem is solved, it will not only be possible to obtain a large amount of electricity at a lower cost, but it will also be easier to transport electricity between regions, in addition to the potential for minimizing environmental impact through efficient use of electricity.

In the following sections, I will discuss how superconducting cables with such great potential can be incorporated while overcoming their disadvantages, and how the future will be better after their introduction.

1. Introduction

The research question in this study is "How can we eliminate losses in energy transportation and supply power to many regions, and what will happen in the future?" I have already calculated extent of the benefits created by superconducting cables. In the process, interviews with Furukawa Electric Co., Ltd. (hereinafter referred to as "Furukawa Electric") revealed the actual situation of each region that although the technology (hardware) has been established, the price (software) is an issue and it is difficult to adopt superconducting cables. With the aim of finding a new way to solve the current situation of high introduction and maintenance costs through mutual cooperation

¹ Superconducting cable — When the substance is cooled to an extremely low temperature (critical temperature $T_c \cong 4K$) (some materials become high temperature superconductivity at 100K), the resistance of the substance becomes very close to 0. This is applied to cables to minimize power loss due to resistance during transportation. Currently, the main types are 275kV HTS power cable and 66kV HTS power cable.



between regions and countries, from an international perspective, for both developed and developing countries, to advance research to build a better power supply system as

a whole.

As for prior research and demonstration experiments, if we take a look at specific sites where superconducting technology has been introduced, the representative ones are MRI² and NMR³, maglevs used in the Tokai Railway's linear motor cars,⁴ and accelerators, such as magnets. According to Furukawa Electric's analysis, current superconducting cables are being introduced in essential situations in the medical and industrial fields, in other words, "things that can only be done with superconductivity." On the other hand, the company also predicts that the maturation of the superconducting market will accelerate the introduction of "things that are economical to make superconducting" in the near future. Based on the above, we predicted that the demand for superconducting technology will increase worldwide in the future, and that it will become widespread.

Another demonstration experiment is Germany's AmpaCity Project. This is an example in which a superconducting cable is actually laid in the city and power is being transmitted, and it shows that the introduction of superconducting cables is possible in society. In addition, there are demonstration experiments being conducted in Japan. NEDO (New Energy and Industrial Technology Development Organization) announced that NEDO was the first private plant in the world to conduct experiments at the Totsuka Plant of BASF Japan Ltd. In the news titled "Laying a three-phase coaxial superconducting cable", "NEDO, Showa Cable Systems Co., Ltd., and BASF Japan Co., Ltd. have recently completed a construction project at the BASF Japan Totsuka Factory (Totsuka-ku, Yokohama). We laid a 200m three-phase coaxial superconducting cable and started a demonstration test aimed at energy saving in the factory from November 8, 2020. The demonstration test will continue until the end of September 2021, and will be used to verify cable cooling with liquid nitrogen. In addition, we will calculate operation costs and confirm safety. If this superconducting cable is used in a plant that uses large-scale power of 30 MW or more, power loss during transmission can be reduced by 95% or more compared to conventional cables. This is expected to reduce electricity costs by more than 20 million yen annually. This will be the first demonstration test in the world to introduce a three-phase coaxial superconducting cable into the

² MRI — Magnetic Resonance Imaging

³ NMR — Nuclear Magnetic Resonance

⁴ Maghreb — Superconducting magnetic levitation high-speed railway

actual system of a private factory." , showing that the introduction of superconducting cables has resulted in enormous cost savings.

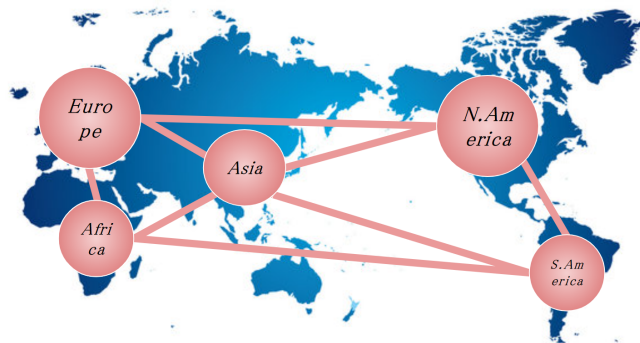
Based on these numerous previous studies and demonstration experiments, I have determined that superconducting cables are not only promising in the future, but are also technically feasible and effective at the time of introduction. Instead, look at overseas demonstration experiments, etc.”, “Interview with government agencies and companies, and receive advice on how to send proposals and receive them.” Pursue the concreteness and accuracy of the materials that serve as evidence", and the research question "How can we eliminate losses in energy transportation, supply power to many regions, and the future beyond that?"

2. Discussion and Implications

Up to the previous paragraph, I have stated that it is necessary to introduce superconducting cables, even though they are very costly. There is a big problem facing the world today. That is the problem of power loss in transmission lines.

Generally, electric wires that we see carry electric current, of course, and are used to supply power to each home. However, the materials used in current cables have considerable resistance, which causes Joule heat in the wires. In other words, a few percent of the originally generated electrical energy is converted into thermal energy due to Joule heat generated by the resistance while passing through the transmission line.

Currently in Japan, the power loss rate on transmission lines is said to be about 5%. It seems relatively low, but if you replace it with the amount of electricity lost annually in Japan, it will be about 45.807 billion kWh/year, and it costs about 500 billion yen to create this million tons of CO₂ that has occurred and cannot be overlooked. This is where superconducting cables come in handy. According to NEDO, a national research and development agency, private power plants that have introduced superconducting cables have reduced losses by more than 95% compared to before the introduction. Furukawa Electric has also calculated that if ordinary Japanese transmission lines are replaced with superconducting cables, losses can be reduced by approximately 77%. Considering the scale of Ross mentioned above, it's obvious how big this makes sense. And the problem of loss during electric power transportation is by no means limited to Japan. According to international comparison



statistics by Global Note, Japan's transmission loss ranks 161st in the world. In other words, there are a number of countries that are posting loss rates that far exceed Japan's transmission loss rate of about 5%. Especially in developing countries, more than half of the generated power is⁵lost during transmission in Haiti and Iraq.

Based on the current situation described above, I propose a plan to introduce superconducting cables on a global scale using international organizations such as the United Nations. First, developed countries will actively invest and cooperate to lay superconducting cables all over the world. Next, developed countries that have invested in developing countries receive all the clean energy generated in large quantities⁶through superconducting cables, making industrial profits. The profits will then be used to increase expenditures for maintenance and new construction of superconducting cables and ODA to developing countries. Through these phased cycles, electricity can be stably and efficiently⁷transported between regions, creating a society where “more electricity, cheaper, and more eco-friendly” can be obtained. This will be a revolutionary innovation in our lives today. In addition, by being able to exchange large amounts of electricity instantaneously and without waste between regions and nations, it will be possible, for example, to supply additional electricity from nighttime areas to areas that use a lot of electricity during the daytime, It will also be easier to transmit the surplus electricity generated in the area to industrial areas.

As a result, the governments of developed countries are expected to invest more in Africa, which is synonymous with economic support for the economies of developing countries. It is believed that the clean and inexpensive use of electricity will lead to significant development of the global economy, increase the ability of international cooperation on a global scale, and bring enormous returns to the world as a whole.

In other words, by summarizing and considering these, it can be seen that superconducting cables have many advantages. They are summarized below.

- 1. Significant reduction in power loss during transportation
- 2. Concomitant reduction in power generation costs and lower power prices
- 3. Promotion of industrial development and infrastructure development in developing regions due to lower power prices

⁵ more than half - Haiti -65.48%, Iraq -64.42% (2019 data value)

⁶ Clean energy generated in large quantities in developing countries - Developing countries are mainly concentrated in areas with harsh natural environments such as deserts and highlands However, such places are rather suitable for generating environmental energy. In particular, solar power generation in the Sahara Desert, etc., and wind power generation in mountainous stormy areas such as the interior of China can generate a large amount of electric power. Conceivable.

⁷ Efficient - for example, a country that uses a lot of electricity at night the same time can be transported at high speed from a country that needs less electricity during the day.

-4. Suppression of environmental pollution by not using electricity - 5. Development of the world economy and strengthening of international cooperation and cooperation through efficient use of electric power

Here, the significance of my research is as described above. Proposed a cable introduction plan.

3. Conclusion

As I mentioned in the introduction, my research question is "How can we eliminate losses in energy transport and supply power to many regions, and what will the future look like beyond that?" My current answer to this question is directly reflected in my proposal and the verification and consideration of its effect.

By laying superconducting cables not only in their own countries but also in developing countries under the initiative of developed countries, rationalization of electric power transportation, and appropriate maintenance and utilization of it will lead to the conspicuous power shortages around the world. State or power corrects an imbalance. By doing this, the problem of loss in energy transportation will be resolved, and power will be supplied to many areas in just the right amount.

In addition, the introduction of superconducting cables is expected to bring significant benefits such as lower electricity prices, control of environmental pollution, and development of the global economy. It is considered to be a good idea to introduce it as soon as possible.

The remaining issue is how to disseminate my proposals and claims to the world, and how to move from paper to action. I would like to widely propose considerations based on the above arguments and realize a world connected by reasonable superconducting cables.

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Status of the LHC superconducting cable mass production

JD Adam ; T. Boutboul ; G. Cavallari

IEEE : Institute of Electrical and Electronics Engineers

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2022/04/01

Poverty in East Africa

~Improvement of food waste and poverty~

5126 Mao Makiguchi

Abstract

I thought of a proposal to simultaneously solve food loss in developed countries and poverty in developing countries. Food loss in developed countries is a problem that must be solved, not only because food is wasted, but also because the disposal of food is bad for the environment. Excessive removal is the cause of food loss. This excess elimination can be reduced by individual awareness. Poverty problems in developing countries have a great impact on the growth of children living in developing countries. School education is not going well, so the cycle of poverty continues.

I found an organization called “Table for two”. This organization sells obesity-friendly menus at cafeterias and donates part of the proceeds to developing countries to solve the problem of obesity in developed countries. I would like to refer to this activity. I would like to sell a meal carefully about excessive removal in a company cafeteria somewhere and donate part of it to Unicef.

1 Introduction

I have been conducting research by setting the research question as what kind of efforts are necessary to simultaneously solve the food loss problem in developed countries and the poverty problem in East Africa. Also, the purpose is to consider efforts to alleviate poverty in East Africa, even if only a little.

Last year, I was conducting research to reduce food loss in Japan. This year, I continued to be interested in food loss and poverty in East Africa. In 2017, one in nine people in the world, or 821 million people, were hungry, malnourished and unable to obtain the food they needed to lead a healthy and active life. Malnutrition causes a decline in immunity and physical strength, and may die without being able to fight the disease. In addition, malnutrition delays intellectual and physical development, which is the cause of school dropouts. If you drop out of school, you will not be able to receive the education you need, so you will not be able to get a job with a high salary, and your children will also become poor, so the vicious cycle will continue.

In recent years, food waste has become a problem in developed countries. In Japan, it is said that each person in Japan wastes a bowl of food a day. In this way, I researched the

situation of poverty in East Africa and the current situation of food loss through books, such as the website of UNICEF on the Internet, as well as books about food shortages in developed countries and poverty-prone regions.

At first, we tried to solve food loss and poverty problems by running a food bank in East Africa and sending leftover food from Japan to East Africa and delivering it to people suffering from poverty. However, this method had problems such as the lack of cost to maintain the food bank in East Africa and the air routes to transport the donated food.

Therefore, when I searched for organizations in Japan trying to solve the problem of poverty in Africa, I was able to find an organization called "Table for two". This organization aims to improve health conditions and increase educational opportunities by delivering school lunches to children in six countries suffering from poverty, and to reduce obesity in developed countries. When you purchase the target TFT healthy menu at the store, 20 yen, which is the amount of one school lunch in developing countries, will be donated, and we are working to donate one school lunch to children suffering from hunger.

Using this initiative as a reference, I came up with a proposal that would lead to a solution to the problem of food loss and poverty. I found a problem and wanted to solve it, so I decided on this research theme.

2 Discussion and implications

Currently, Africa's population accounts for 15% of the world's population. Therefore, it is expected that it will become a huge market in the future. Twenty countries on the African continent have averaged over 5% GDP growth in 2004-2006, and inflation is one-fifth of what it was a decade ago, showing good economic performance. As of 2004, 41.1% of the population lived on \$1 a day, and hunger rates exceeded 35% in 18 countries.

And now many developed countries are facing the problem of food loss. It goes without saying that food loss is wasteful, but there is also the problem of promoting environmental pollution and wasteful national spending. About half of the food loss comes from households and companies. By changing our consciousness, food loss from households will decrease, leading to a reduction in the amount of food loss overall. So I thought it was a solvable problem.

There are solutions to not buying too much and not making too much, but the problem I want to solve this time is the food supply at home. It is "over-removal". Excessive removal means throwing away edible parts, such as peeling the thick skin of vegetables during cooking. Many people over-remove. I thought that by gaining knowledge about

over-removal, people's awareness would increase and food loss would be reduced even a little.

I wanted to solve the problem of food surpluses in developed countries and lack of food in poor regions, so I researched volunteer groups. I found a group called "Table for two". This organization supports school feeding programs and garden and agricultural production improvement programs in six countries in East Africa: Uganda, Rwanda, Tanzania, Kenya, Malawi and the Philippines in Southeast Asia. And this organization aims to improve health conditions and increase educational opportunities by delivering school meals to children in six countries suffering from poverty, and to reduce obesity in developed countries. As an actual initiative, if you purchase the target TFT healthy menu at the employee cafeteria or store, 20 yen, which is the amount of one school lunch in a developing country, will be donated, and one school lunch will be presented to a child suffering from hunger. It can be done.

The purpose of my research is to improve poverty in East Africa. It will reduce and help solve the problem of poverty. However, it is not possible to make people know how to cook without excessive removal just by eating a menu that is conscious of excessive removal, so it does not lead to people's awareness. For that reason, we put an easy-to-read board on each table that briefly summarizes how to make each menu, what we were conscious of when making it, and what we usually tend to remove excessively. Currently, there are fewer opportunities to talk and eat in order to prevent the spread of the new coronavirus infection, so I think that if you put something easy to understand in a conspicuous place, people will see it. Regarding the actual menu to be sold, there is a site called "Consumer Affairs Agency's Kitchen" that the Consumer Affairs Agency has uploaded to Cookpad, so I would like to extract from this site and decide.

In addition, we are thinking of targeting companies with a high percentage of women, rather than companies with a large number of men. This is because I thought that women are still more likely to cook at home, although there are more and more opportunities for men to cook.

I believe that this group has a high degree of credibility. In fact, an event called "Onigiri Action" was held on SNS. Onigiri Action is a symbol of Onigiri, a typical Japanese food, and if you post a photo of "Onigiri" on SNS (Instagram, Twitter, Facebook) or on a special site, one photo post is equivalent to five meals. This is an initiative in which a sponsor company provides a donation of 100 yen, and through the NPO TABLE FOR TWO International, school lunches are given to children in Africa and Asia. Hosted by Table for

two, which works to solve the world's food and health problems through food, it is held every year on October 16th to commemorate World Food Day. Onigiri Action has been held for 6 years from 2015 to 2020, and a total of 1 million photos have been posted and about 5.4 million meals have been delivered.

3 Conclusion

In conclusion, referring to the efforts of an organization called “Table for two”, the company's employee cafeteria should have menus and recipes that consider excessive removal. I wanted the opinion of a specialist, so I thought that if I worked with the nutritionist of the company to create a menu, I would be able to discuss issues such as cost.

As for future prospects, I will first look for recipes on the Cookpad of the Consumer Affairs Agency that are easy to practice and suitable for the in-house cafeteria. I would like to make a decision after doing a little more research on the criteria for judging what kind of menu is suitable for the in-house cafeteria.

I would like to find out more about what kind of companies can introduce it easily, how to donate Table for two, etc.

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Health and Economy

~Economic Development Using e-Sports~

5127 Takuto Morita

Abstract

One of the values of e-sports is the business . Another is e-sports for maintaining health: it has been proven that e-sports can prevent the decline of physical and cognitive functions, which are essential for life, and that e-sports can connect people to society. There are many advantages to playing e-sports. In my research up to last year, I have been thinking about how we can use these to protect the health of the elderly. Then we decided to look at this from a different angle. In doing so, we found that there are many problems. For example, there are issues of cost, securing facilities, gathering people, and so on. These problems will continue to follow the project wherever it is implemented and will be difficult to solve. Taking the cost issue as an example, it would be difficult to implement the program without the support of a company or municipality. We have concluded that the establishment of a corporation is the best way to solve these problems.

1 Introduction

Many companies are achieving success through businesses using e-sports, which have become popular in many parts of the world in recent years. Many of these businesses are involved in player management, administration, and deals. In addition to this, there is sponsorship revenue. These are the main reasons why e-sports companies operate. I believe that there are two aspects to sports. One is the aforementioned e-sports business. The other is e-sports for maintaining health, as it has been proven that e-sports can prevent the decline of physical and cognitive functions, which are essential for life, and that e-sports can connect people to society. There are many advantages to playing e-sports. In my research up to last year, I have been thinking about how we can use these to "protect the health of the elderly. Then we decided to look at this from a different angle. In doing so, we found that there are many problems. For example, there are issues of cost, securing facilities, gathering people, and so on. These problems will continue to follow the project wherever it is implemented and will be difficult to solve. Taking the cost issue as an example, it would be difficult to implement the program without the support of a company or municipality. We have concluded that the establishment of a corporation is the best way to solve these problems.

2 Discussion and implication

So far, eSports has been shown to have positive effects on the body. For example, it prevents cognitive decline, improves muscle strength, and increases social connection. As a practical example, in Korea today, the gaming industry, including e-sports, has been one of the most advanced in Asia since the 1990s, amid a policy of promoting IT. 2015 saw the Korean gaming market surpass the 10 trillion won (approximately 1 trillion yen) mark, and it continues to grow at around 2% per year. In proportion to the growth of the market, the number of e-sports tournaments and leagues has been increasing year by year, and it is estimated that more than 70 organizations are currently active in the industry. South Korea's boom in the e-sports business, which began with the 1998 release of the "StarCraft" game title, has led to the formation of a large industry as the public and private sectors have embarked on the e-sports business. The popularity of "StarCraft" and other RTS20 titles, as well as MOBA titles, which are derivatives of RTS, is strong, and talented professional players are active in these fields. Furthermore, the revenue of teams active in e-sports and other games is largely dominated by the sponsorship and advertising portions. Therefore, support from existing companies is considered important for the full-fledged management of sports teams, and how to increase their name recognition and attract attention is considered important. Therefore, it is necessary to devise a financial way to support such companies. Also, the rest of the funds are to be made available through equipment and guts airing. The company I am proposing will provide health services to the elderly and physically challenged, and use the revenue from these services to purchase broadcasting rights for e-sports competitions, etc., and sell the rights to generate revenue. We would also like to provide a service that allows people to receive tips for doing so. In addition, since sound and picture quality are the most common complaints about broadcasts, we would like to provide a service that will make people feel good about their viewing experience. In parallel with this, we would also like to recruit companies and individuals who agree with us. And finally, we would like to establish a company that meets these conditions. We would also like to aim for dedicated management like that of Korean companies.

3 Conclusion

The goal is to provide health services to the elderly and physically challenged, and use the revenue generated from these services to purchase broadcast rights to e-sports and

other competitions, and sell them to generate revenue. We would also like to create a system that allows people to receive tips for doing so. In addition, since sound and picture quality have been cited as complaints about online broadcasting of surveys via the Internet, we would like to create a service that will allow people to enjoy watching the survey in a pleasant way. In parallel with this, we would like to recruit companies and individuals who agree with us. And we would like to aim for companies that can achieve these goals.

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Solving the problem of poverty by horse racing

~Raise the benefit efficiently by introducing Special Economic Zone~

5128 Morimoto Daiki

Abstract

I make developing countries run horse racing using the system of “Japanese horse racing association must pay some money to the national treasury” The biggest problem to fulfill and keep this idea is funding. I solve this problem by introducing the Special Economic Zone (SEZ). Also, we can invite many foreigners to the country which holds horse racing. And improve welfare of developing countries to return money to the citizens.

1 Introduction

The motivation of this study is that I notice the power of horse racing in the category of commerce. When I studied horse racing last year, I found the JRA, a Japanese horse racing association, sold 3 trillion 91.1 billion yen. The association must pay 10% of their sales to the national treasury. So, they paid 391.1 billion yen last year. This money is used to improve welfare. The merit of this system is that the people who didn't buy the horse racing ticket can get benefits.

However, in Japan, the sum of money being paid to the national treasury is 10%. If the country runs horse racing, we can use much more money.

Trial calculation: $3 \text{ trillion } 91 \text{ billion yen (sales)} - 3 \text{ trillion } 91 \text{ billion yen} \times 0.75 \text{ (the percentage of deduction)} = 772 \text{ billion yen}$

I think the idea can help to solve the poverty of developing countries. The system is that. The rich buy horse racing tickets, the government gets money, and the government uses the money for inhabitants. This is the goal of this study.

According to the previous study, the cause of poverty is mainly two points: one is “political” the other is “commercial”. This time, I will use horse racing as a commerce and make the economy active. So I think my study is related to “commercials”.

The way to study is to make what we need to hold horse racing and the problem clearly. Also, Macau gets most of its tax revenue from holding gambling. So as a reference, I will study Macau's gambling industry and use it to my study.

2 Discussion and implication

First, what we need to hold horse racing is the estate. We need a huge estate to construct a horse racing park. Concerning the estate, there are many developing countries, which have a lot of state-owned land. For example, such as Zimbabwe which has a lot of state owned land.(table 1) The percentage of state-owned land is 18%, or 6970000ha. This is as large as Georgia. It doesn't cost anything if we construct the structure of the state. So it is the advantage of developing countries.

表 21 ジンバブエの土地所有区分別面積、人口配分と森林面積 (1,000ha)

項目	土地所有区分				計
	共有地	再定住地	商業農地	国有地	
面積 (1,000ha) (対国土面積%)	16,360 (42%)	3,790 (8%)	12,450 (31%)	6,970 (18%)	39,570 (100)
土地分級 (潜在農業生産性 ¹⁾)	IV、Vが74% をしめる	II、IIIが56% をしめる	I、IIが31% をしめる	IV、Vが80% をしめる	
人口 (人) ²⁾ (対全国人口%)	5,352,304 (74%)	426,687 (6%)	1,346,753 (19%)	38,806 (<1%)	7,164,550
森林面積 (対全国森林%)	10,000 (43%)	n.a	7,000 (30%)	6,000 (26%)	23,000 (100)

table1 area division of Zimbabwe

Also, the cost of construction is 9.8 billion yen.(reference,Nagoya horse racing park).This is high and we need the fund by considering the cost we will use to maintain it. So the problem is “collecting the funds”.

Now, I will introduce Macau to you. Macau is the country which gets its tax revenue from casinos.

マカオにおける税収内訳 (2017年実績)

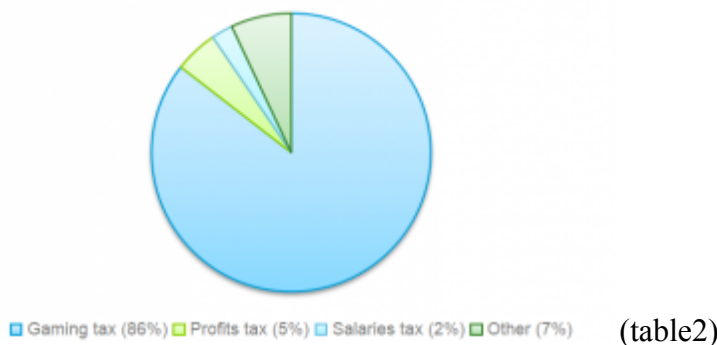


Table 2 is the breakdown of tax revenue of Macau. The portion of light blue shows us the percentage of tax revenue, 86%. The development of the casino industry is related to European countries. Formerly, when Hangzhou started to trade with Europe, Macau was selected and developed as the rest place of Europe.

From this, inviting foreign people is a good way to develop gambling industry. I'll introduce “introducing SEZ” to you. SEZ is the system in which we can promote the foreign companies to enter their own country by making rules of preferential treatment in tax

and deregulation for foreign companies. The owner country can get the funds and technology from foreign companies.

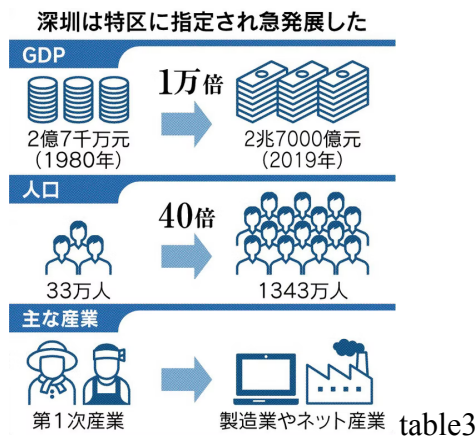


Table3 is the result of SEZ which was introduced in China. Not only GDP but also population is increasing by 40 times. Increasing population makes the number of participants in horse racing increase. So SEZ is good at this point.

3 Conclusion

Next, about the proposal after introducing. The area of construction is near SEZ. The reason is the area is expecting many sales.

I thought of the idea of two areas to support.

First, the area of education. They can't work stably without enough education because of the problem of reading and writing. They can't get a job and establish a company if they can't understand the contents they should learn. The leader will always be the rich without education for the poor.

The second is rural areas. Rural areas are among the poorest areas in developing countries. However, it is not desirable to provide assistance to individual farmers here. If support is given to individual farmers, they may lose their motivation to work because they receive money even if they do not work. Therefore, I have come up with the idea of creating an agricultural enterprise and providing support to it. The company and the farmers would form an employment relationship. In other words, the farmers would be paid a salary. The company would use the support money to buy agricultural machinery and to improve the farmland. This would improve the efficiency and quality of farming, and since the farmers would be paid a salary, they would be able to live a stable life.

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Education for the World's Children

～Solar Cow for School～

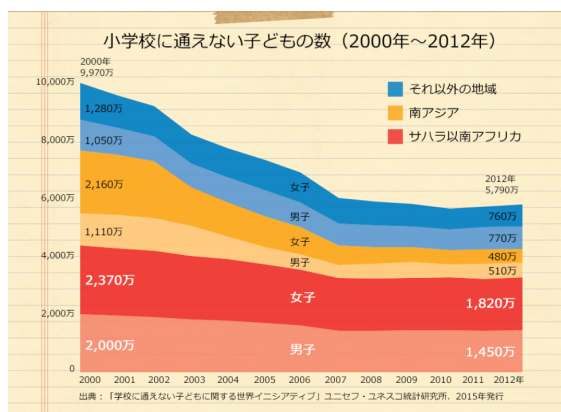
5129 Yokoo Taisei

Abstract

As of 2021, there are about 150 million children in the world who cannot attend school. Although the number has been decreasing in recent years, it is still not a small number. The main reasons for not being able to attend school are economic issues, such as family poverty and inability to pay tuition fees, and the inability to make a living unless children work as laborers. The purpose of this study is to reduce the number of such children who cannot attend school. The method is to increase the benefits of going to school through government support for tuition fees and the introduction of solar cow.

1 Introduction

There are many children in the world who cannot attend school. There are more than 115 million children in the world who cannot even go to elementary school. Although the number has been decreasing in recent years, it is still not a small number. The main reasons for not being able to go to school are that their families are too poor to pay tuition, or that they have to work to support their families. Children in such an environment are unable to make their own decisions about whether or not to receive an education, making it difficult for them to escape the vicious cycle of poverty. This is especially true in urban areas where poor people live together, known as slums. The purpose of this study is to enable such children who have difficulty attending school for economic reasons to attend school.



2 Discussion and Implications

We found it necessary to do the following in order to enable children who are can't attend school for economic reasons to attend school.

- (1) Educational support for families who cannot afford to pay for education.
- (2) Get parents to give their approval for their children to attend school.

Method 1) "Educational Support."

First of all, economically challenged families have difficulty paying for education. Therefore I propose to provide educational support in the country.

Elementary schools in Kenya are compulsory, and tuition has been free since 2003. However, schools charge money for various reasons, such as to renovate enzymes or to buy equipment. Thus, even if parents agree for their children to go to school, there are cases where they cannot go to school due to lack of money or have to give up in the middle of the school year.

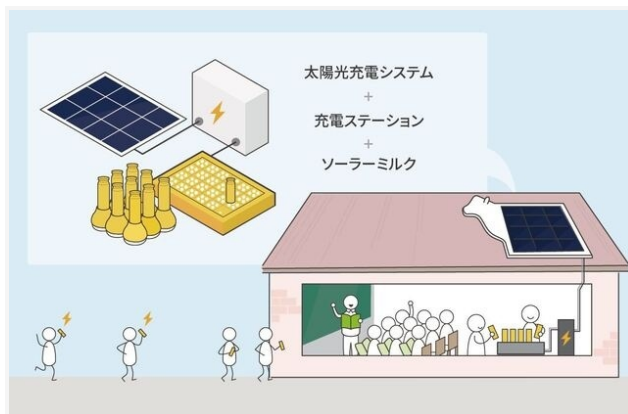
3 Conclusion

Method 2: "Introduction of Solar Cow and Solar Milk"

Ex.) Africa? Solar Cow, Solar Milk in Africa

Solar Cow" is a cow-shaped power plant powered by solar energy. It is installed in a school in the suburbs of Africa.

Solar Milk" is a battery in the shape of a milk bottle. When used in soft mode lighting, it can be used for about 6 hours. iPhone 12 pro can be charged about once.



↑How Solar Cow works

Solar Cow is installed in schools so that the battery can be charged only in schools. Children who receive the battery, called "Solar Milk," spend their days at school attending classes until the battery is fully charged. They can charge their cell phones and radios at home with this battery. At night, they can be used to light up the house and have a variety of other uses.

Low-income families have to go to expensive charging stores far from their homes to recharge their cell phones, and SolarCow can provide these families with environmentally friendly energy. (For example, the average Kenyan household's energy costs account for 15% of their monthly living expenses.) The ability to reduce electricity costs is also a major economic benefit, allowing them to send their children to school. In fact, it has been observed that student attendance increases in Kenya and Tanzania where SolarCow has been introduced.

I believe that it is possible to send children who cannot attend school around the world to school by introducing these (1) and (2). However, we would like to consider where and by whom these costs and facilities will be supported, and how the system will be structured, as these issues have not yet been specifically considered.

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Food problems and Agritech

~Application of latest technology to food~

5130 Yoshizawa Yoshihiko

Abstract

This study examined how agritech can solve food problems related to food security in Africa. In considering the articles of the solution, I set the following conditions: self-sufficiency, stable and sustainable supply, and availability of safe and clean food. I then proposed "subsurface agriculture. The technologies I focused on were AI, automated farm machinery for fertilization, harvesting, and condition management, and vertical and LED agriculture. By utilizing LED agriculture and vertical farming methods, as well as AI, subterranean agriculture will make it possible to secure food efficiently and easily with fewer human resources. In the future, it will be possible to utilize this technology not only in African countries but also in other countries around the world.

1 Introduction

I started this research because I'm interested in the food field. I wondered if there was any connection between the food field and cutting-edge technologies such as drones, AI, and big data, which are currently developing remarkably, and started researching on this topic. After that, I learned about the idea of agritech, which aims to make agriculture more efficient by using cutting-edge technology.

The issue I want to solve through this research is the food problem especially in African countries. I narrowed down the target to African countries because I thought that African countries had more problems with food resources than food quality. Therefore, I decided to study food resources in particular among food problems.

Currently, hunger is progressing in Africa. For example, if hunger continues to spread in South Sudan, about 7 million people, two-thirds of the population, will fall into serious hunger in the next few months. In addition, according to the 2015 World Development Index, the poverty rate for people in sub-Saharan Africa is a serious 41.1%. And one of the causes is conflict. Many farmers have been forced to flee their farms due to the conflict, and they cannot harvest their crops. As a result, malnutrition among children in Africa becomes a serious problem. "Eating" is the basis of daily life, and it is thought that an urgent solution is necessary.

I believe that this research can help people suffering from hunger in Africa. In addition, if the proposal can be realized, it will be possible to realize the proposal not only in African countries but also in countries around the world. .

2 Discussion and implications

First, I investigated the situation in Africa. Here, I mainly investigated what is considered to be related to the food problem. I found that the main causes of hunger in Africa can be roughly divided into economic conditions, bad and abnormal weather, and civil wars and conflicts. I decided to focus on bad weather and abnormal weather because it can be solved by agritech. It seems necessary to propose a form of agriculture that is not affected by such things.

I also investigated South Sudan, the Central African Republic, and Somalia as countries where the situation of poverty is serious. About the Republic of South Sudan, in February 2018, three UN agencies said that without sustained humanitarian assistance, more than 7 million people, about two-thirds of South Sudan's population, could face a serious crisis in some months. A major cause is the conflict and the rainy season, which begins in April. It makes aid communities do health, education and food assistance services. In the Central African Republic, bad conditions of roads, the rainy season and political instability make access to rural areas almost impossible. In the country's conflict, armed groups attack civilians and aid groups, so it is difficult for aid groups to do services related to health, education, food and so on. For Somalia, the main cause of hunger is drought. In addition, soaring food prices, a 20-year civil war, and large-scale bombing attacks by terrorist organizations are also problems.

Considering these causes of African food problems, it is impossible to solve problems such as civil wars and attacks by terrorists with agritech. However, by farming underground, it seems possible to farm without being affected by civil wars or terrorism. If it can be realized, it will be possible to farm and secure food regardless of the weather problems such as drought. In addition, considering the cases of attacks by terrorists on citizens and aid organizations, it is thought that citizens will need to get food by themselves. Considering this point, it is important to be able to farm on one's own without requiring specialized knowledge, to be able to expect stable harvests, and to be safe and clean food.

Also, it is necessary to reduce the burden on people. We thought that we could reduce the burden by using AI and allowing machines to automatically do harvesting. It is believed that these factors will enable a stable and large-scale supply of safe and fresh food.

Next, I investigated LED agriculture by referring to "Speed breeding LED technique grows food six times faster than conventional farming", a study by the University of Sydney and the University of Queensland in Australia. Benefits of LED agriculture include: It is believed that LED cultivation will allow crops to grow faster than conventional cultivation methods. It is believed that the use of LEDs can reduce power consumption compared to using incandescent or fluorescent lamps. Considered to be less likely to be malnourished and weak crops. It is thought that the amount of crops we can harvest can be increased. From these facts, it is thought that LED agriculture will enable control of cultivation speed and massive harvest in a small area of farmland. This has the advantage that a large amount of grain can be harvested from a small amount of farmland. In addition, by increasing the cultivation speed, it will be possible to harvest more quickly than before, and it will be possible to secure more food.

Next, I investigated vertical farming by referring to Badia Farms, a farm in Dubai, and the Indian start-up company "Plenty." The best thing about vertical farming is its overwhelming efficiency. According to Plenty, when compared to farms of the same size, it is believed that vertical farming can yield 350 times more than conventional ways of farming. And in vertical farming, it is also a big advantage that the "hydroponic method" can be used. Hydroponics method is a method of growing plants using only water without using soil. And it is also possible to analyze data to improve yields and provide high-quality food at a lower cost and in a sustainable manner. In addition, it is also believed that any crop can be grown in vertical farming. Among them, leafy greens and some fruits and herbs are said to be easy to grow. However, since the purpose of this research is to cultivate crops that serve as a staple food, I think that it would be good to grow food such as rice and wheat. With the introduction of vertical farming and LED agriculture, it is believed that we can harvest crops much more often than before.

Finally, I researched harvesting machines by referring to inaho Co., Ltd. inaho Co., Ltd. is a company that develops an agricultural platform, especially about automatic vegetable harvesting robots using AI. According to a farmer who actually introduced an automatic harvesting machine using AI, it not only reduced the burden on his body, but also increased his income. And thanks to these advantages, he became able to focus on sales. Automatic harvesting machines can reduce the burden of human work. Considering the introduction in Africa, there is an advantage in that a small number of people is demanded by introducing an automatic harvesting machine.

3 Conclusion

I propose "Underground farming" as a solution to African food problems. Underground agriculture here refers to underground farming using LED and vertical farming with harvesting machines, AI, and air conditioning. The problems of this research are that the required environment and equipment are unknown, the method of human resource development is unknown, and the cost has not been estimated.

Considering these points, it is a good idea to start with Urban agriculture using the technology related to "Underground farming" in developed countries in order to solve Africa's problems. Urban agriculture here means using vacant buildings, offices, and basements to grow crops using the same methods which we use in Africa. It is hoped that using this system in developed countries will solve the problem of human resource development and also clarify the issues that will arise if the system is introduced. In addition, this will not only serve as a demonstration of "Underground farming" in Africa, but will also benefit developed countries. Not to mention the many other advantages that can be cited when farming in Africa. For example, it will not only help solve food shortages and farmland shortages caused by population growth, but also help solve the shortage of farmers. Because of the advantages of developed countries in these points, we hope that preemptive introduction in developed countries will help solve problems related to food security in African countries.

Other countries will also benefit if it is introduced in Africa and the food security problems in those countries are solved. It enables a stable, rapid, large-volume, and sustainable food supply. There are benefits for the aforementioned developed countries, but there are benefits everywhere. The greatest advantage of "Underground farming" is that it is not affected by environmental factors. Because it is not affected by the environment, it can be grown anywhere, anytime. Considering these points, the technological development of "Underground farming" may be a clue to solving the future food problems of the earth.

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(August 31, 2022)

To Reduce Discrimination Against Women

～Aiming to install women-friendly restrooms～

5131 Mitsuki Yoshida

Abstract

When I researched the sanitary environment of toilets in Japan because of the lack of cleanliness in public toilets in my neighborhood, I learned that there are areas in the world where people don't have toilets themselves and practice open defecation. I learned that there are many problems such as the number of children who get sick and die, the low employment rate and status of women due to the delay in education for women, and the loss of life due to attacks by dangerous animals at night. Among these problems, I wanted to improve the fact that women's status is lowered due to the lack of toilets. Therefore, I set a goal to install toilets for women. However, it is also difficult to obtain safe water in many areas where open defecation is practiced. Therefore, we decided to set the final goal of this study as the installation of toilets that are friendly to women and nature. However, in order for women to be able to use the toilets with peace of mind, it would be necessary to provide a caretaker to keep the toilets clean and to establish a habit of keeping the toilets clean. Therefore, along with the installation of restrooms, we would like to simultaneously improve the employment rate by making the caretaker of such restrooms a female occupation, and by incorporating restroom cleaning into school education to ensure permanent access to clean restrooms.

1 introduction

I felt that the public toilets near my house were very dirty. Then I researched the sanitary environment of Japanese toilets to see if it was not very good, and found that the sanitary environment in Japanese toilets is very good, and that there are many countries in the world where the sanitary environment is not as good as it is in Japan. I also learned that there are many countries where girls cannot go to school or women have difficulty going out because of poor sanitary conditions in toilets or because toilets are not well maintained. We also learned that in many areas where toilet facilities are not well maintained, there is also a lack of water supply. Therefore, I decided to conduct this research in order to make it possible for women to go to the toilet safely even in countries where water and toilet facilities are inadequate, and to create a world where discrimination against women does not occur.

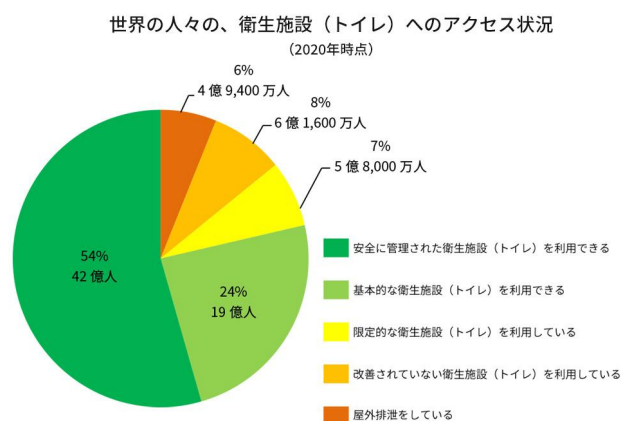
2 Methods of Research

We will gather information on three topics in order to understand the current status of toilets in the world. First, the prevalence of toilets in the world and their sanitary conditions. Second, the problems caused by the lack of toilets and the problems that exist at this stage. And third, the current efforts being made to promote the use of toilets. Also note the company or organization sponsoring the initiative when researching the initiative. Next, we will examine in detail countries with high and low toilet coverage rates, and investigate the causes of the differences and whether there are differences within each country. At the same time, we will examine the commonalities among countries with poor toilet facilities and the differences between those with and without toilet facilities. As a method of research, we are considering searching for articles and asking people who have actually been to countries with low toilet coverage to talk to us about their experiences. Based on this information and previous cases, we are planning to make a proposal.

3 Results and Discussion of the Research

First, we looked at the current situation and problems with toilets around the world. According to UNICEF, 3.6 billion people in the world currently do not have access to a safe and sanitary toilet. The definition of a safely managed toilet is "an improved toilet that is equipped with facilities to separate excreta so that it does not come into contact with other waste or is transported to another location for safe and hygienic disposal, and is not shared with other households." The study also found that approximately 500 million people live in environments where open defecation occurs. There are three main problems with open defecation.

The first is increased susceptibility to infectious diseases. Worldwide, 800 children a day die from diarrhea caused by open defecation environments. In India, in particular, 523 million people defecated in the open in 2015, and about 120,000 children under the age of five die annually from infectious diseases that are primarily caused by open defecation.



Second, after sunset, when people defecate in the open, dangerous animals can harm and kill them, and women are more vulnerable to sexual assault. In India, there was a case in which a woman was bitten by a cobra while defecating in the open and lost her life.

Third, discrimination and inequality will increase. According to a UNICEF survey, one in ten African girls miss or quit school because they are "embarrassed to be seen doing their business" or "don't know what to do during menstruation. This has led to a large difference when comparing literacy rates between girls and boys. The literacy rate in India is 78.9% for boys and 59% for girls, a

gap of about 20%. Low literacy rates make it difficult for them to find employment. In addition, because it is difficult to

表：インドの男女格差における主要指標

(一は値なし)

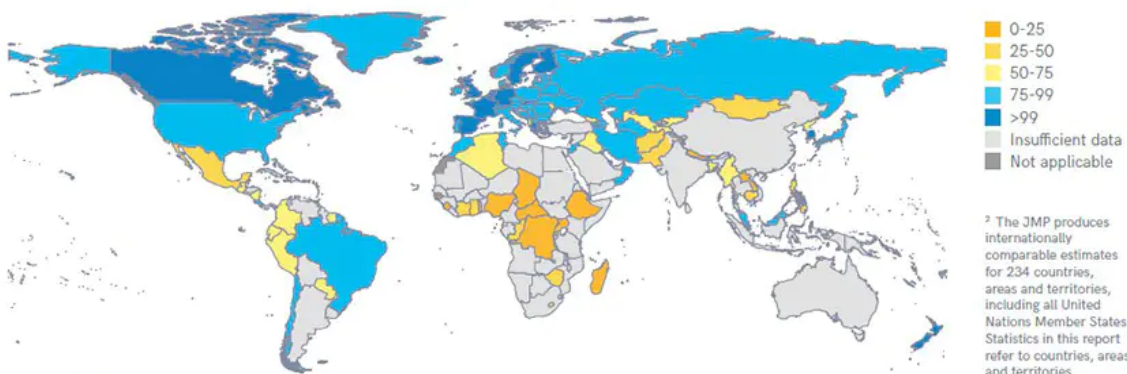
項目	順位	女性	男性
経済への参加	139	—	—
労働力参加（%、15～64歳）	136	29	82
推計所得（USドル、PPP）	137	2,424	10,428
議員やマネジメントの割合（%）	114	13	87.1
プロフェッショナル、技能労働者（%）	118	25	74.7
教育	112	—	—
識字率（%）	118	59	78.9

find a job in their home country, even if they try to go abroad to work, they cannot be hired because they have never studied a foreign language or learned how to read and write. Thus, women who can't work are forced to stay at home and do housework, making it difficult for women to improve their status.

I set the third theme, "improvement of women's status and eradication of discrimination," as the final goal of my research, which was to establish a project to install restrooms that are easy for women to use. Therefore, I investigated areas where there are few toilets installed and where open defecation is common.

The map below shows the distribution of the number of safely managed toilets in the world. The orange areas on the map indicate regions with between 0% and 25% of the world's population having access to safe toilets. And it can be seen that most of them are unevenly distributed in Africa.

In 2020, 138 countries² had estimates for safely managed drinking water services



The map

FIGURE 4 Proportion of population using safely managed drinking water services, 2020 (%)

below also shows the distribution of safely available water. The map is colored orange to indicate areas with 0% to 25% safe water availability. It can be seen that many of these areas coincide with areas with low installation rates of safely managed toilets.

In 2020, 120 countries had estimates for safely managed sanitation services

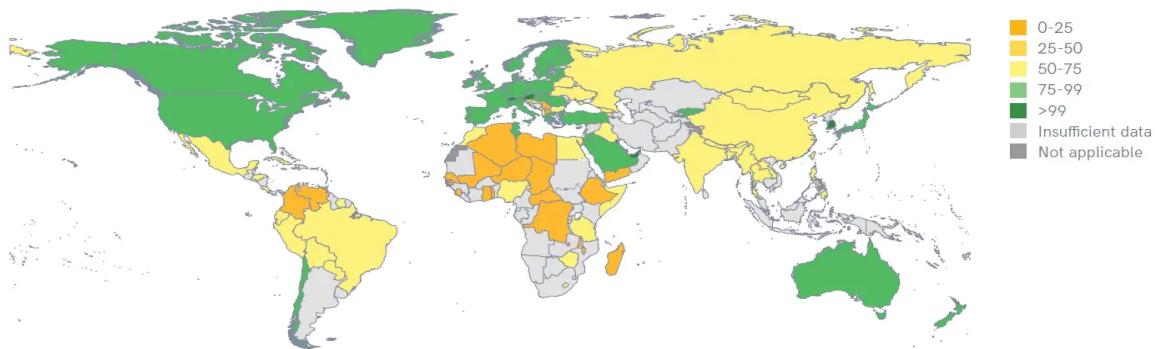
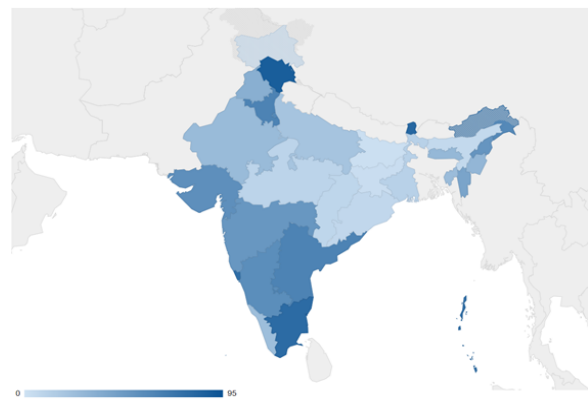


FIGURE 7 Proportion of population using safely managed sanitation services, 2020 (%)

The study also looked at India and found that there is a wide variation in the distribution of safely available water within the country.

These revealed that there is less safe water available in areas where there are few safely managed restrooms. This was particularly true in the suburbs of Chad, Congo, Central Africa, Ethiopia, and India. I decided to conclude that toilets should be easy for women to use and friendly to nature. Therefore, I decided to first look into previous studies of restroom installation projects in developing countries and areas with low toilet coverage.



The first is a toilet installation project by united earth. United earth is installing toilets in Cambodia, and we learned that they have currently raised about 140,000 yen. However, we did not know the details of the toilets installed, such as the appearance of the toilets, the installation scenery, or the number of toilets installed.

The second was the "Toilets for Everyone Project" conducted by LIXIL. For every one LIXIL integrated shower toilet purchased, a "sato" portable toilet was donated. The project has succeeded in donating 400,000 units in two years. The advantage of this initiative is that more toilets can be installed per year. On the other hand, the disadvantage is that by installing too many toilets in a year, there is a high possibility that all the toilets will be out of sight and out of mind, resulting in unclean toilets.

The third is a toilet installation project conducted by Mikasa Corporation. Mikasa does not install toilets in developing countries or areas with low toilet penetration, but rather in national environmental reserves or in prosperous areas of the country. Mikasa is installing nature-friendly toilets. That is the installation of toilets called "Mikalet". Mikalet appears to be a toilet with no disadvantages, such as no need for water and no stink. However, there are two disadvantages. It costs a lot of money and it is not suitable for mass installation. While toilets sold by TOTO, a major toilet manufacturer, cost approximately 250,000-350,000 yen, the toilets sold by Mikasa cost at least 2.4 million yen, including the enclosure. Another disadvantage is that only 16 units can be installed over a five-year period. Through these previous studies, I found that a toilet that crosses the elements of "leasability and ease of installation like SATO" and "nature-friendly" like "Mikalet" is necessary for a toilet that is easy for women to use and nature-friendly.

I also thought of my own ideal toilet, referring to LIXIL and Mikasa's toilets. First, I used a toilet shaped like a pumping toilet. I want to achieve a bio-toilet by adding a mixture of cedar chips and local soil to the toilet tank. The difference from other toilets is that originally only cedar chips would be used, but by adding local soil, costs can be reduced. Also, if we can work with a large company, we can use a toilet bowl that is less expensive per unit by mass production, which would also reduce costs there.

4 Conclusions and Future Prospects

It is said that many of the toilets installed in foreign countries are not well managed, resulting in unclean environments. If the toilets become unclean shortly after installation, they will be wasted. Therefore, I thought it was necessary to keep the toilets clean. So I see three different ways to do this.

The first is to get into the habit of cleaning the toilet. If the toilet is dirty after use, you can prevent it from getting dirty by setting a rule that you wipe it with toilet paper or brush it with a brush in the private room.

The second is to establish a profession to manage the toilets. It would be very efficient for students to clean the toilets in schools because they would get into the habit of cleaning the toilets from a young age and the toilets would become cleaner. And it is a good idea to leave the toilets installed in public places to those who are in charge of toilet management. We would like to establish a profession such as a toilet cleaner. This would help maintain a certain level of cleanliness. I also think that by increasing the number of occupations, it will lead to giving women who want to work but have been unable to do so a chance to find a job. If the conditions for employment in those occupations were to be made only for women, I

think it would lead to an increase in the employment rate of women, and at the same time, improve the status of women.

The third is to make a video on how to use the toilet and how to make it a habit to go to the toilet. For those who see a restroom for the first time, using a restroom is difficult and may become a chore, so it is necessary to create videos on how to use the restroom and recommendations to use the restroom so that people will become a little more attached to the restroom and the restroom will become a part of their daily lives. I think it is necessary to make people more attached to toilets and make toilets a part of their daily lives.

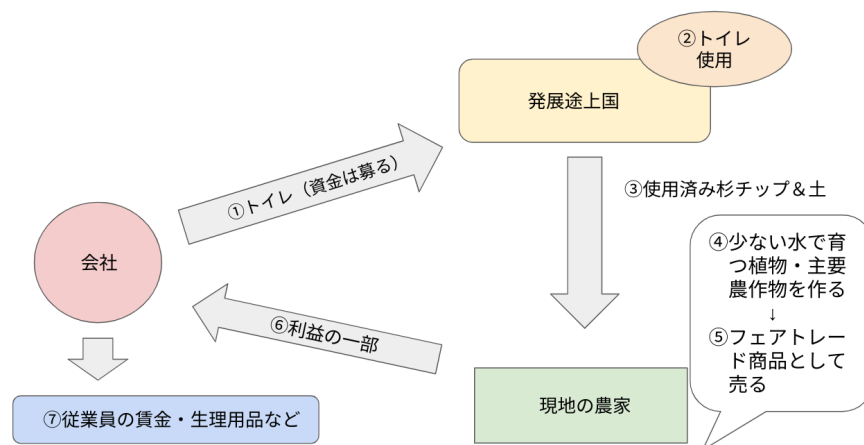
Therefore, the result of my research is a project to install natural and women-friendly toilets that are both "easy to install and easy to use like SATO" and "natural like MICARETTE," and to create a profession to manage the toilets. Two points.

Currently, I am considering the idea of establishing a company that hires toilet caretakers. I would like to use the profits generated by the company to purchase equipment and other items to be placed in the restrooms. As shown in the figure on the right, (1) Establish a company, (2) The company will take the initiative in the toilet installation project (3) Local people will use the

toilets, and the used cedar chips will be given to local farmers at the time of cedar chip replacement (4) Local farmers will use the used cedar chips as fertilizer to

grow plants and major crops that can grow with less water,(5) Sell the resulting crops and products as fair trade products in developed countries (6) Receive a portion of the profits from the sales (7) Use the profits to pay employees, procure equipment for local toilets, and install the next toilets.

Currently, we are considering ways to generate stable profits, such as by introducing a guaranteed buy-back program, but we would like to explore better ways to do this.



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Overturn Child Abuse

improve the employment of single mother

5201 Sarasa Aoyama

Abstract

According to the research about single mother, the rate of single parent in Europe is higher than Japan, but the rate of the poor is lower. I would like to refer to the research, and make good ideas. Single parents do this in each town, and the area becomes fine even though it is a country. The office worker can lunch more happy, the younger can enjoy as if they are in city.

1 Introduction

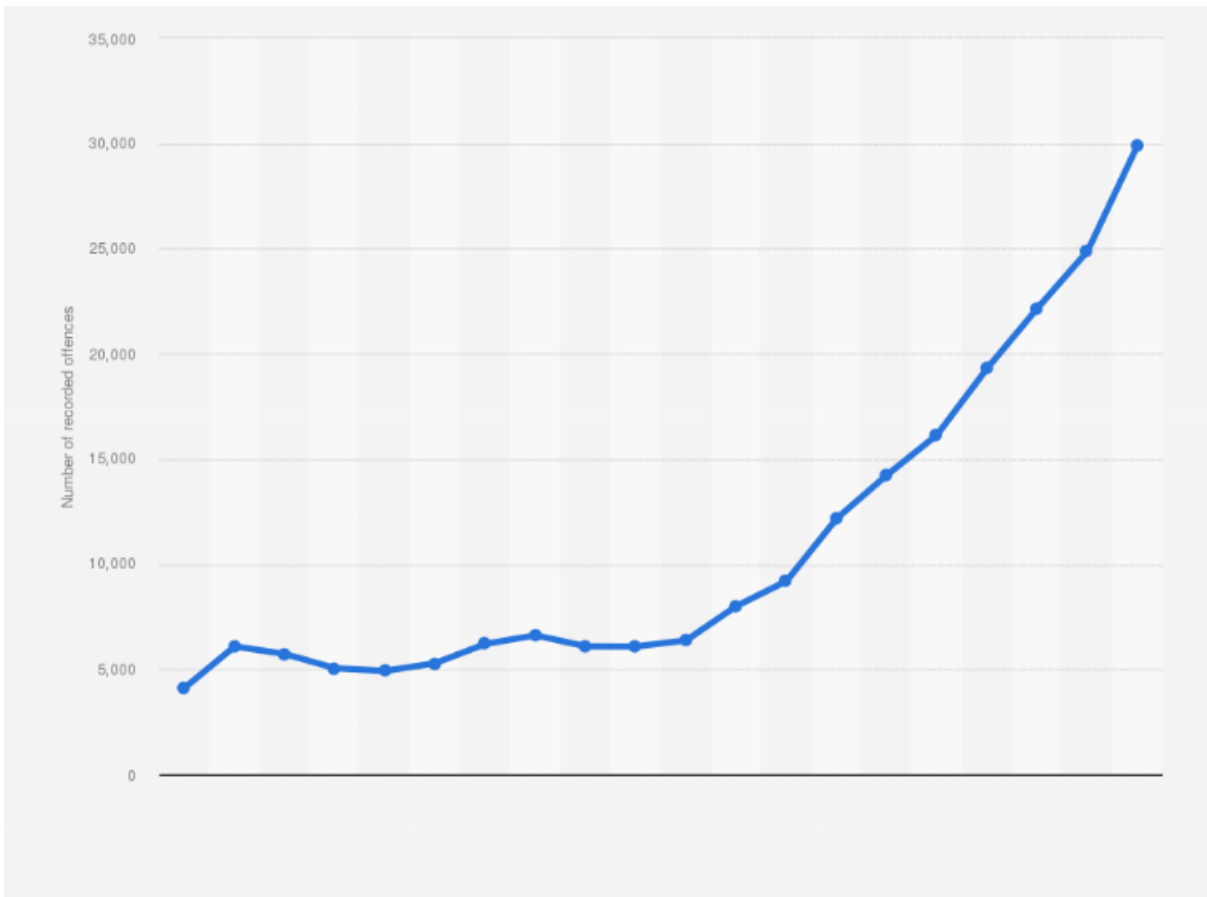
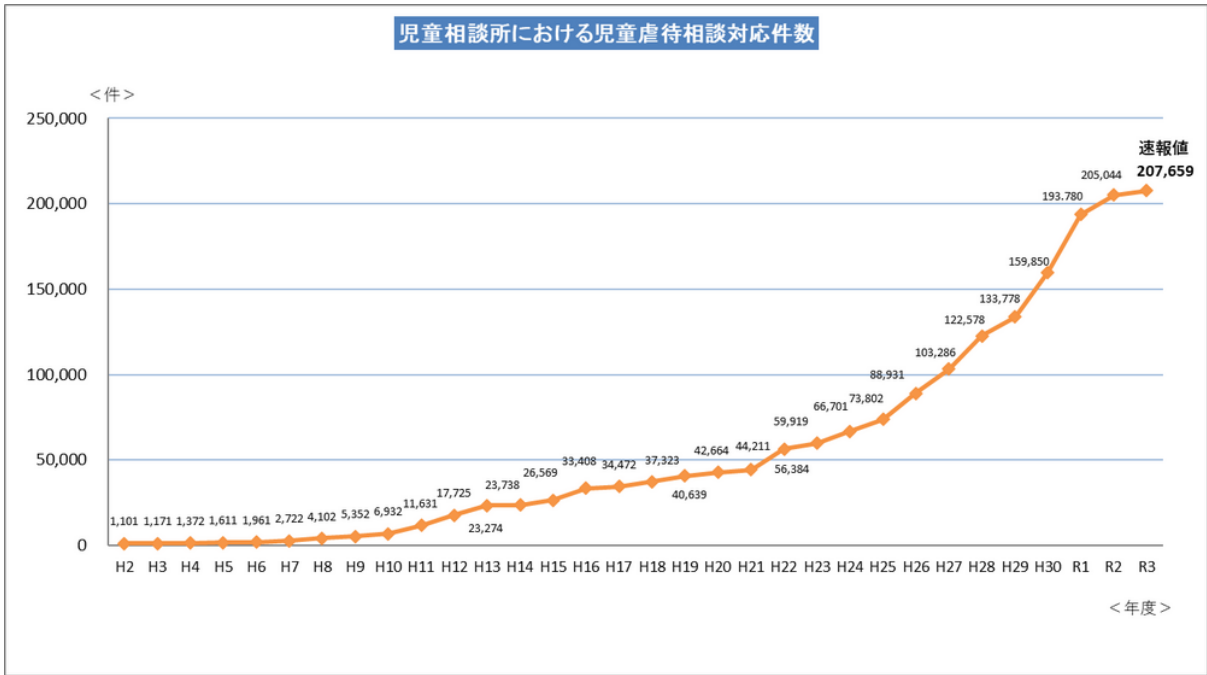
We often hear about the news of child abuse. It means that there are many children who should be saved. Actually the number of consultation about it is increasing. One of the causes is the responsibility of raising children become large. About 30% of abusing people is single parent who is in poor situation. First, I decide the goal: to improve the employment of single parent. According to the research about single mother, the rate of single parent in Europe is higher than Japan, but the rate of the poor is lower. I would like to refer to the research, and make good ideas.

2 Discussion and implications

There are some kinds of abuse. Physical, mental, sexual, and neglect. Especially the number of mental abuse is increasing since 2004 in Japan. About 50 % of the abusing people who killed their children is biological mother. Today's news about that reports the abusing people is father, but real is different. The children abused physically are dead of violence. The children abused mentarilly or sexually are dead of suicide, desease from stress.

In this research, to reduce the number of child abuse, I set the goal: to improve the employment of single parent.

The keys of stating abuse are stress between family, feeling loneliness, the anxiety of living, or financially. The emotion about anxiety and loneliness in raising children is never special. This connect with child abuse. We should solve these problem.



3 Conclusion

In this research, I want to suggest that single parents do mobile sales. By doing this, they can work efficiently. It covers many problems, for example, having time limit, need for sudden holidays. Single parents do this in each town, and the area becomes fine even though it is a country. The office worker can lunch more happy, the younger can enjoy as if they are in city.

Mobile sales are very free. They can sell not only food, but also clothes, cosmetics, books and so on. They can sell anywhere so I think they had better be active in the countryside where many elderly people hardly go shopping. And then the single parents can hear much advice about raising child so it is good idea to get the chance to know how to raise children.

However there are many issues which should be solved. Doing mobile sales means using a car. So some people do not have driver license, so it is hard to start. Getting the license costs much. The single parents in poor situations cannot pay the cost. Not only cost of license, but also buying car cost. Cars are very expensive. Moreover, starting it needs any permission applications. It cost too much. Working in an office is easy to start and earn much. But if the business becomes good in mobile sales, the good point is much.

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The New Value of Soccer Club

~Solving Religion Problems by Soccer Club in Philippine~

Abstract

The purpose of my research is to manage a soccer club in the Philippines and to make the club a model team for solving local problems. I would like to manage Fukuyama City Club with a focus on "community development," obtain funding, and build a winning team. We thought that the best way for a club that is still not well known and weak to obtain funds is to utilize the good qualities of the community to attract capitalists and obtain funds. If they can get funding, they can acquire good players, improve their training environment, and become stronger.

The Philippines was chosen as a research target because it is ranked No. 1 in terms of the best countries for investment, and its economy is expected to grow in the future. Also, the Philippine league has only six teams, making it easy to enter. The main issue in the Philippines that I would like to solve through a community-based integrated club is the economic disparity in the country. In contrast, I plan to solve this problem by building a ground for players and the general public. This is related to the SDGs "Create a community where people can continue to live."

1 Introduction

The purpose of my research is to operate a soccer club in the Philippines, as mentioned above, and to make the soccer club a model team for solving local problems. There are countless problems in the world, but while local problems are smaller in scale than international problems and easier to address, they come in a wide variety of forms, and the funds available in each region are different, which limits what local governments can do and makes it difficult to solve them. Therefore, we thought that soccer clubs could take the initiative in solving regional problems to achieve their goals. There are many soccer clubs around the world, large and small, and each has its own "color" rooted in the local community. That is why I thought that by creating a model team to solve local problems in the Philippines, it could be applied to various regions. Fukuyama City Club is one of the few clubs that aim to be a comprehensive club that solves local issues. Fukuyama City Club is a working adult soccer club based in Fukuyama City, Hiroshima Prefecture, and is aiming to

join the J-League, a professional league. It is currently a member of the Chugoku Soccer League, a regional league. Unlike conventional clubs, Fukuyama City Club is focused on "community development" and uses soccer as part of that approach. Fukuyama City has no professional sports team, and many people feel a sense of inferiority and cannot confidently call Fukuyama a "Fukuyama" city. Fukuyama City is facing a declining population and a shrinking economy, and as is typical for a rural area, the city is heading in the direction of decline. (Fig. 2) Fukuyama City Club is a soccer club that aims to express soccer in a way that is impressive and inspiring to anyone who sees it, since many people are new to the sport or watching soccer for the first time. The Fukuyama City Club is proposing ways to contribute to the needs of local businesses and municipalities through sports. There are also plans that involve not only the local community but also local companies and local governments, such as proposing ways to contribute through sports to the needs of local companies and local governments in relation to soccer, and proposing facilities for the welfare and health care of local companies. I am interested in such a philosophy, which is not a conventional charity project such as soccer schools or volunteer activities, but rather an investment project, and I wonder if this could be applied to regions around the world.

My hypothesis is that "the economic disparity in the Philippines will not be entirely solved by soccer clubs, but the disparity for some people will be eliminated or reduced. The most appropriate way to verify this is to actually operate a soccer club in the Philippines, but since this is not realistically possible in the near future, I would like to simulate how much capital I can bring in and how much construction, maintenance, and labor costs my plan will incur. I would like to know how much it will cost to build, maintain, and staff my plan.

2 Discussion and implications

- About Comprehensive Clubs that Solve Local Problems

A club that aims to contribute to the community by taking advantage of the fact that clubs are located in different areas, setting up and implementing a style of play tailored to the area, and conducting activities linked to local issues. Fukuyama City Club is an example of a citizen-participating club that provides sports in other sports and for multiple generations, develops human resources, engages in cultural activities, and solves local issues in the process.

- Fukuyama City Club

Fukuyama City Club is a working people's soccer club based in Fukuyama City, Hiroshima Prefecture, and aims to join the J-League. The following is an excerpt from Fukuyama City Football Club.

"In November 2019, we changed our name from (a) Fukuyama Sports Community Club (hereafter referred to as Fukuyama SCC). Fukuyama SCC is an organization that incorporated the voluntary "Let's build a professional soccer club in Fukuyama" in June 2015, and Fukuyama City Club will maintain the philosophy of Fukuyama SCC from its inception, which is to provide sports to people of various backgrounds and generations, as well as to engage in human resource development and cultural activities to solve local issues. We are now a comprehensive club that solves local issues, and we are promoting activities that propose a healthy and stylish lifestyle for Fukuyama 100 years into the future.

Fukuyama City Club is taking a two-step approach to community creation. First, we get to know the city of Fukuyama, and then we discuss what changes we can make as a club with an eye toward the club's philosophy. So they started their activities by first looking around the city and discussing its history. Next, they connect it to soccer. How do we connect this to soccer? We build a style of play that suits the city. The foundation of the project is the local community, and on top of that, there is the expression of soccer.

Fukuyama has a population of 470,000 and a relatively stable economy, but it is a somewhat closed, conservative, and unique cultural area that is neither Hiroshima nor Okayama. And because there is no professional sports team, many people feel inferior and cannot confidently describe Fukuyama as such. The challenge is that the population is going to decline, the economy is shrinking, and the city is going to move in the direction of decline, as is usual in rural areas.

Fukuyama City Club has a philosophy of "pioneering and challenging" to enliven the city through sports. As for soccer, many people are new to the sport or watching soccer for the first time, so we have set the phrase "ambitious football" to express soccer that strikes and moves anyone who sees it. Specifically, this means playing soccer in which we take the initiative in offense and defense. In order to realize this style of play, we create a game model.

- Game Model

The Catalan Football Association, the home of the world-famous FC Barcelona and a leader in soccer tactics, defines the game model as follows.

"The regular and systematic organization and collective behavior that the coach expresses and desires for his team in the various moments of the game." (Catalan Football Association)

Simply put, this is a set of rules of play, individual or collective, adapted to each situation of the game, in the team in order to make the players carry out the vision that the coach has set out to win the game. It is important to create this game model. It is important to create a game model because it is a common set of principles for the team that the players can use as a foundation for their play. This model of play can range from the broad to the specific, and the idea is to take the broad and put it into the specific. And many factors influence its creation. There are the local cultures and their challenges.

In the case of Fukuyama City Club, the challenges in the region include economic decline, population influx, and a sense of inferiority, so we set forth a rough game model (style of play) of soccer in which the club takes the lead in offense and defense.

- Vision

Fukuyama City Club aims to create a team that the local community will support even if we do not win. However, the club I am aiming for is a team that wins. The reason for this is that if we win, we will receive money, which will lead to further development of the club. I also believe that winning is the easiest way to prove that the vision of the team we have been working on is correct.

In addition, in order to solve the economic disparity and lack of infrastructure in the Philippines, I am considering the establishment of a soccer ground and gymnasium that will be fully operated by the club. The ground and gymnasium would be available for use by both professional players affiliated with the club and the general public, and if used by the general public, it would be free of charge, though only during hours that do not interfere with the professional players' practice. This will have four effects. The first is that all people, regardless of money, will be able to experience and enjoy sports. Sports can also lead to the health of citizens and the development of local communities. Second, by watching professional athletes practice up close, being amazed at their awesomeness, and communicating with them, we can expect attendance at games and spectator income. Third, children who experience the joy of the sport and watch a game will become interested in soccer and join the club's developmental age school, which will enable the club to consistently develop good players and earn transfer fees if those players move to big overseas clubs. Fourth, it requires employment to maintain the grounds and gymnasiums, which leads

to job security. This can reduce income inequality. As clubs become stronger, watching games will become a part of tourism, leading to tourism around the area, which will in turn lead to the development of infrastructure. If the infrastructure is improved and employment is secured to some extent, the city will become a place where people want to live, and this will lead to SDG 11, "Create a city where people can continue to live.

- Money

The main sources of funding for clubs are sponsorship fees, revenue from product sales, J-League distributions, and admission fees. All of these will increase if the club wins. Using these funds to acquire good players and improve facilities will lead to the development of the club.

- Investment

Of the aforementioned sources of funds, sponsorship income represents a particularly high percentage. The best way to obtain sponsorship income efficiently is to bring good investors into the club. There is a foreign team that has been able to win because of a change in investors and an increase in funds. Manchester City. This team is based in Manchester, England, and until the early 2000s, they were a Premier League team that was repeatedly relegated and promoted. However, in 2008, the team became part of the Abu Dhabi United Group, a UAE-based company with total assets of 100 trillion yen, which used the extra money to acquire star players one after another and develop the team into one of the best in the world.

For a small club to be invested in by a large company is a very difficult thing to do. So, The best way to be invested is to promote this in a country where it is very easy to get investment. Therefore, I decided to do my research in a country where investment is easy to come by: according to U.S. News & World Report, the number one country in the world for investment is the Philippines. The Philippines is the 13th most populous country in the world. The population pyramid is beautifully shaped like Mt. Fuji, and the average age of the population is 24 years old, making it a very healthy country compared to other countries. In other words, it has a large working-age population. This is a period when the ratio of the working-age (15 to 65) population to the total population continues to rise, known as the demographic dividend period, or is absolutely high, and an increase in the population engaged in production is expected to lead to economic growth. The demographic bonus period is expected to end in 2062, which is a very long time since Japan's demographic bonus

period ended in 2005. This situation is similar to Japan's period of rapid economic growth, and the Philippines is expected to experience economic growth in the future. In addition, the Philippines has only 6 clubs in the league, which is small even by global standards, making it easy to enter the league. In addition, the Philippines has a low FIFA ranking of 129th (out of 206, February 10, 2022), but the number of FIFA points earned has risen dramatically since 2018, and the country has room to grow in both soccer popularity and strength.

For these reasons, I aim to contribute to the local community by creating a comprehensive club in the Philippines that solves local problems.

- Community-based

If a soccer club is not loved by the community, people will not come to watch the games, and conversely, the club will become a liability to the community. Therefore, it is necessary to become a club that is loved by the community. To this end, I think it is important to make steady visits to the local shopping district and other places. An example of this is Kawasaki Frontale. Kawasaki Frontale is located in Kawasaki City, Kanagawa Prefecture, which has long been considered a "sports wasteland. It was in 1991 that the Lotte Orions, formerly the Lotte Marines, moved its home base from Kawasaki to Chiba. Verdy Kawasaki, formerly Tokyo Verdy, moved its home base from Kawasaki to Tokyo in 2001.

In 1996, Kawasaki Frontale was born. At first, the team was in J2 and not very strong, so the attendance was only sparse. However, the team's high-profile players who participated in matches actively contributed to the local community, and the staff made numerous trips to the city's shopping district to promote the team, which helped the team gain the trust and popularity of the local residents.

- Problems in the Philippines

The problem in the Philippines is the lack of infrastructure. In particular, there are many issues in terms of water supply, sewage, and transportation. Sewage treatment is inadequate to the point of polluting the surrounding ocean. In terms of transportation, the country is unable to keep up with the growing population of the Philippines, resulting in frequent traffic jams, and transportation costs (social losses caused by traffic) amounting to 6 billion yen in Japanese yen. If this is left unchecked, it will balloon to 15 billion yen by 2030. What offers hope is Josui. Water supply has been provided by the local Mynilad company. However, the water supply infrastructure was inadequate, with a 78% water supply

penetration rate and a 32% 24-hour water supply rate, and the residents of Metro Manila did not have adequate water supply services, but by 2018 the water supply penetration rate had improved to 94% and the 24-hour water supply rate to 98%. This is due to the active support of a Japanese company, Marubeni Corporation. We would like to collaborate with Marubeni from now on.

3 Conclusion

If what is discussed in the vision can become a reality, we expect the hypothesis to be achievable. The challenge for the future is what kind of capitalists and foreign companies will support and finance this plan.

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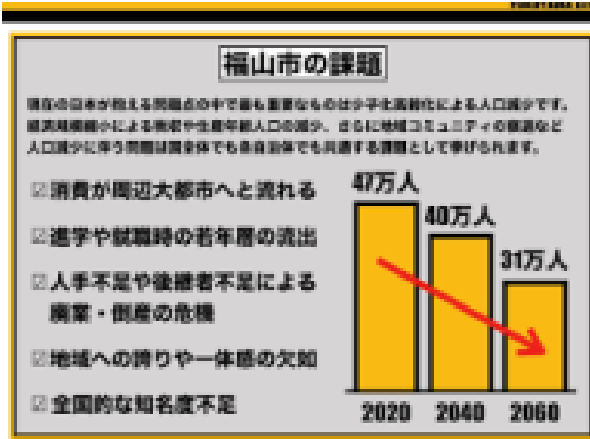
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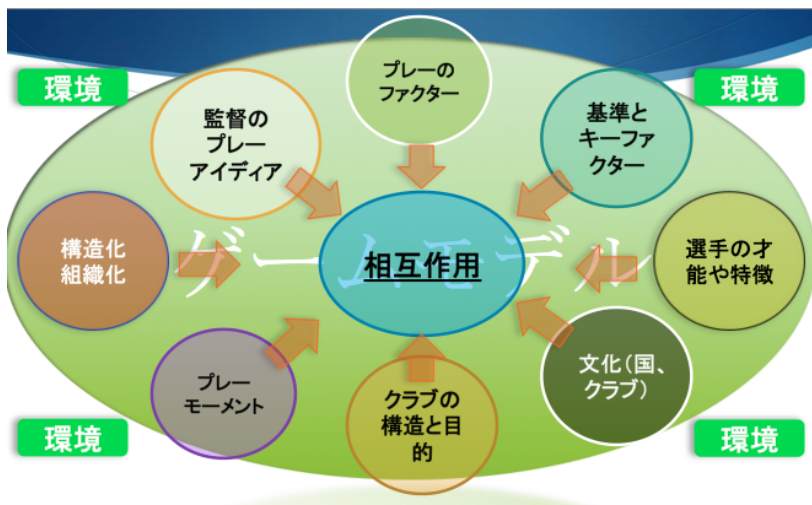


①The goal of SDGs11

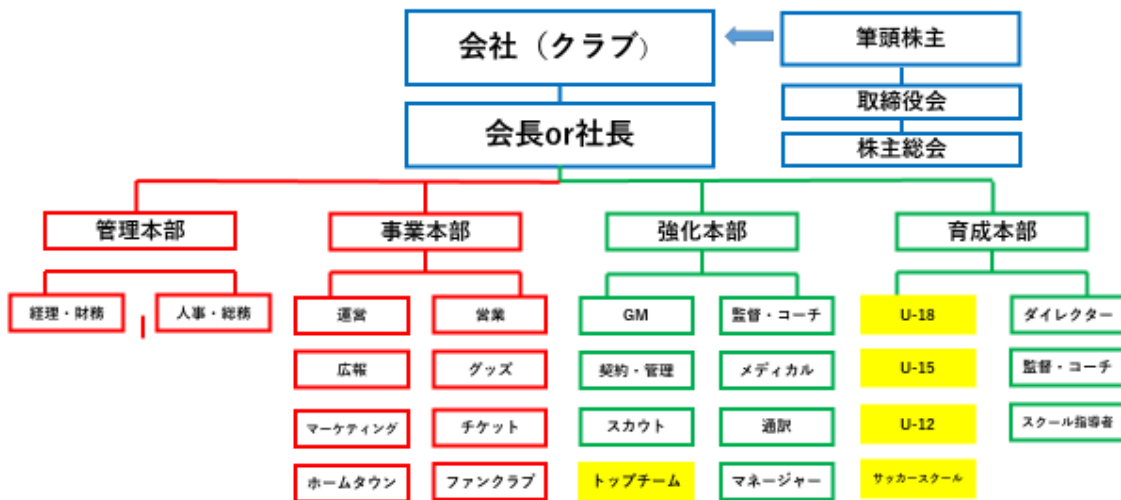
②Issues in Fukuyama City



③Rough overview of the game model

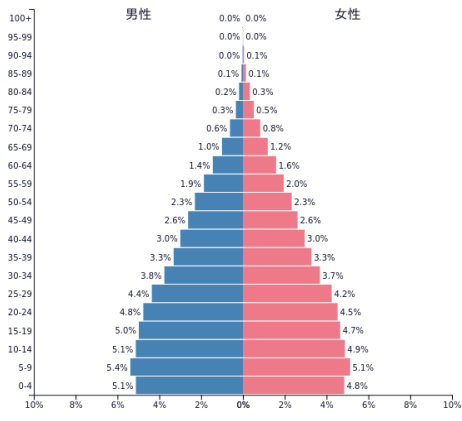


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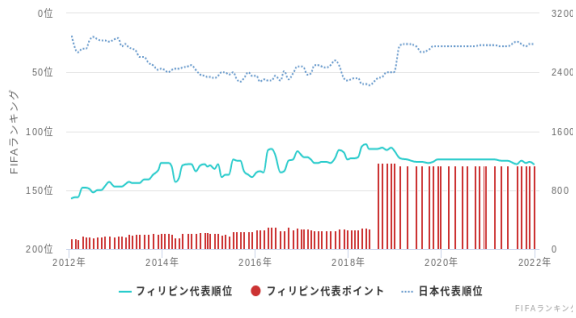


④The organization chart of Jclub

⑤ Philippines Population Pyramid in 2019



⑥ FIFA Ranking and Points Earned by the Philippine National Soccer Team and Comparison with the Japanese National Team



The practical application of the “Healthy Menu Pick-up Service”

—To solve the problems of lifestyle-related diseases, FLW, and hunger—

5203 Yuri Asai

Abstract

In this research, I suggest the “Healthy Menu Pick-up Service” as a solution of lifestyle-related diseases and FLW (Food Loss and Waste) problems in developed countries, and hunger in developing countries. This enables users to receive nutritionally balanced meals, to prevent lifestyle-related diseases, and reduce the burden on users and food loss because it eliminates the hassle of shopping at the supermarket. Furthermore, I would like to contribute to solve the problem of hunger by donating a portion of the service fees in this application to countries that are suffering from hunger issues through the cooperation of companies such as TABLE FOR TWO, which connects developed and developing countries and provides school lunches. Also by adopting the BOPIS (Buy Online Pickup In Store) system for the operation of this system, various grocery retailers, including large and small companies, will be able to adopt and carry out the system, which will not only solve the world's food problems, but also improve the efficiency of supermarket management and further increase the profit margin.

1 Introduction

Since last year, I have been researching three issues related to food. In recent years, "FLW" and "lifestyle-related diseases" have become problems not only in Japan but also in the world.

Despite the fact that there are 900 million undernourished and malnourished people in the world, and about one in eight people suffer from malnutrition, a large amount of food loss is occurring in developed countries. In Japan, 6.12 million tons of food is wasted every year, of which 46% are still edible. Among this food loss, 46% is household waste. The percentage of household waste is 57% for leftovers, 23% for damaged food, and 11% for out-of-date food. This indicates that the most common cause of food loss is leftovers due to excessive food purchases. Thus, food waste is created in developed countries due to an oversupply of food, while it's a serious problem to be poverty in developing countries called "food imbalance". I like to eat, and I am very thankful for food. I often try to plan menus, and search for delicious food on the Internet in my daily life, but when I learned about the current

situation, I wanted to solve the food loss and hunger problems as soon as possible so that all people can be healthy, be thankful for the food we are given, and not waste it.

In addition, lifestyle-related diseases have become such a serious problem in Japan that they are ranked in the top three causes of death. In other countries such as the U.S., the Philippines, and India, the number of people suffering from high blood pressure, heart disease, and diabetes has been increasing due to the westernization of food styles. Through this research, I hope to reduce the number of such people with pre-lifestyle-related diseases and extend their healthy lifespan by continuing to lead appropriate lifestyles.

For those reasons, I carried out research until last year, and finally proposed a "healthy menu pick-up service". In this system, anyone, including nutritionists, doctors, and dieters can register on the application, users select their favorite menu from the "healthy menus" proposed by those, a nearby supermarket picks up the ingredients, provides them to consumers in a store and the consumers cook at home.

A portion of the fees will be sent to developing countries to cover the cost of school lunches for children in the form of financial aid, thereby providing an opportunity to promote self-reliance in developing countries.

As mentioned above, I suggested the application last year. This application, while modeling an existing system, is a completely new food delivery service. The application is based on BOPIS, which is currently actively implemented in other countries and is becoming popular in Japan as well. BOPIS is a store pick-up and layaway service, which customers can pick up items on the internet and receive them at a physical store. For consumers, it has the advantages of buying cheaper than online shopping that is delivered to the customer's home, and shortening the time spent in the physical store. For businesses, it helps to improve customer satisfaction, reduce logistics costs, and promote store visits. Although the term "BOPIS" is not well known, it attracts attention from various companies. It is based on the "meal kit" service that delivers necessary ingredients with recipes to reduce the burden of cooking for themselves, the "online supermarket" business that picks up food from stores and delivers it to their homes, such as "AEON Net Super", and the "cooking recipe community website" typified by Cookpad. It can be said to be an innovative application by utilizing these ideas in a new way. It could encourage further development of the food business and promote food education on a global scale by solving food problems that are occurring around the world.

The research question for this study is "What are the benefits for supermarkets and users in food pickup and layaway services?"

The main focus of the project is to consider in more detail what this system is needed to realize the operation of the "Healthy Menu Pick-up Service". Especially, how much of the usage fee will be spent on delivery to provide the food, on the operation of the application, and on supporting developing countries. Also, supermarkets are essential to develop this system on a global scale. Therefore, it is important to find a way to attract the attention of companies that operate supermarkets, and to make them feel profitable enough to continue adopting this service. From this, I will research the management methods of related supermarket businesses by using the Internet and books, etc., and research the services and businesses that food companies are seeking through fieldwork in order to realize this service is adopted.

2 Discussion and implications

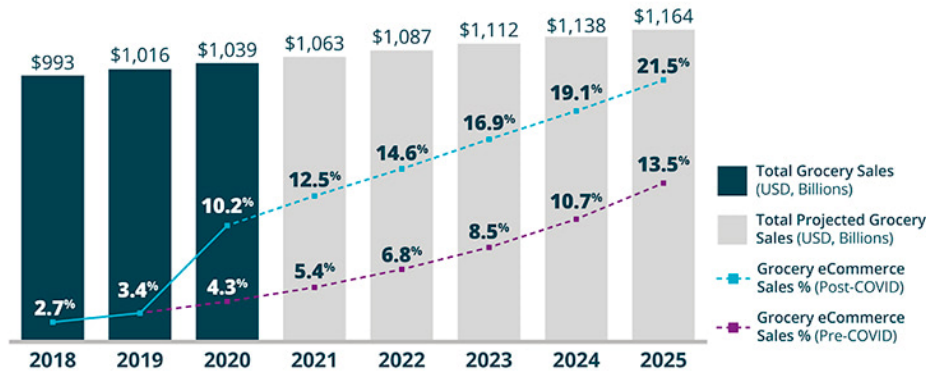
• hypothesis

The hypothesis for the research question, "What are the benefits for supermarkets and users of food pick-up and drop-off services?" is that: (1) They can reduce waste and optimize labor costs by adjusting Inventory (2) Small supermarkets that do not have such a system can easily be introduced because the app takes care of order information management (3) They can increase sales by posting advertisements in the app. Although (1) is an advantage for the supermarket side, it is difficult to imagine that the profit would be large enough to gather many supermarkets. The second is that the application will manage inventory in one place, but it is not certain possible to gather and manage inventory information from various supermarkets in one application. Also, the solutions of (3) has still a question as to when it can provides a service that favors one supermarket among those registered from large to small scale supermarkets, it would only benefit the large supermarkets.

• Examples of BOPIS applications and sales rates around the world

The following graph shows the change in online purchasing rates in the U.S. From 2018 to the present, online grocery sales have grown rapidly since the COVID-19 and are expected to continue to do so in the future. Like Japan, the online grocery category has been the slowest to progress, but it grew by +6.8% from 2019 to 2020 thanks to BOPIS and curbside pickups, which can handle a large number of orders. In particular, major distributors such as Walmart and Target have maintained BOPIS in recent years and increased sales significantly. Walmart, speaking at the NRF in January 2021, announced that "five years of change happened in five weeks at their company (not five months). " and "increased its time slot for receiving BOPIS by 40 times more than before COVID-19. As such, the demand for

BOPIS implementation is strong, and it is obvious that sales will increase dramatically with its introduction. However, when small and medium-sized enterprises introduce BOPIS, it must be considered the costs, benefits, and advantages of introducing BOPIS.



← Change and projected growth in online purchasing rates of U.S. Grocery (Source: Mercatus)

<https://forbesjapan.com/articles/detail/42513/2/1/1>

• Benefits of implementing BOPIS for supermarkets

First, the most important advantage of online purchasing is that it can cut time to buy food in stores. BOPIS does not require customers to select products and go through a checkout counter, which is different from in-store purchasing. Another advantage is that it reduces logistics costs. To deliver products to every customer who purchases products from an e-commerce store, sorting products by delivery destination and arranging delivery trucks become complicated, and logistics costs tend to increase. However, the products received at each store can be sorted by store and delivery trucks can be arranged in bulk, which has the advantage of greatly reducing distribution costs. An additional benefit is that the number of orders can be ascertained in advance, thereby reducing labor costs. Thus, it can be seen that the introduction of BOPIS has benefits and advantages for the implementer as well.

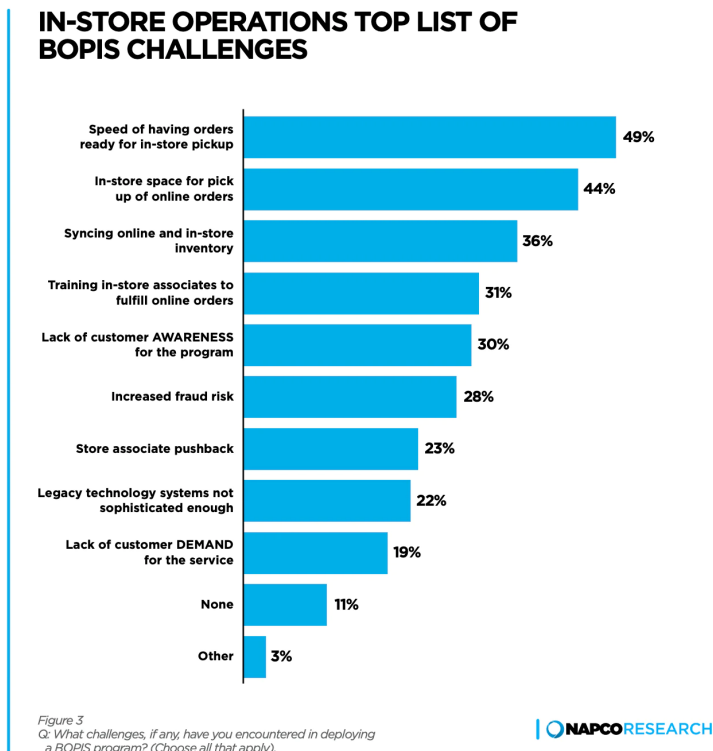
What Consumers Like The Most About BOPIS



← Advantages Customers Perceive in Online Shopping

<https://www.yieldify.com/blog/bopis-retail-ecommerce/>

However, there is also a difficulty in implementing BOPIS: since BOPIS accepts orders at the same time as store purchases, the number of orders may increase too much to keep up with the response, and space in the store may become inadequate. To solve this problem, it will be necessary to assign a specific capacity to be in charge of BOPIS orders and facilitate a dedicated space set up in the store, but this will be difficult for small and medium-sized companies to implement.



← Difficult points of BOPIS implementation

<https://www.shopify.com/retail/bopis>

•BOPIS Case Studies

In this section, I will refer to actual cases in which BOPIS has been implemented. First, let us mention a case study in Japan. Yodobashi Camera, MUJI, Workman, Nitori, Sushiro, Aeon Retail, and others have introduced BOPIS for a wide range of goods, including general merchandise, clothing, and food. Among them, there are two examples of efficient BOPIS handling: the use of "Smart Locker" and "Curbside Pickup". The smart locker system has the advantage that the customer and the clerk can exchange goods without contact, as the clerk picks up the ordered items and places them in the locker, and the customer picks up the items from the locker. Curbside pickup means that ordered items are picked up at the store's dedicated parking lot, which has the advantage of reducing the cost of delivery to the

customer's home. In addition, Starbucks, Wal-Mart, Home Depot, and Nike have introduced BOPIS overseas, and Wal-Mart, a major U.S. supermarket company that pioneered and actively developed BOPIS, has introduced robots for picking up merchandise and installed lockers for pickup. This has enabled the company to reduce labor costs, efficiently respond to large orders, and dramatically increase sales. I am considering substituting these successful cases for the "Healthy Menu Pick Up Service". Although initial investment is required, I believe it is important to encourage large companies to install robots and lockers, and to further convince other companies of the benefits of BOPIS implementation.

- How to implement BOPIS in small and medium-sized enterprises

In the retail industry, labor and real estate costs eat into gross profit margins, and there are many supermarkets with low profit margins, especially in the food retail industry. BOPIS can contribute to improving the profitability of retailers, both as a labor-saving solution to cope with the difficulty of securing personnel due to the declining working population and as a space-saving solution based on the reduction of sales floor space. However, as described in the previous section, BOPIS requires a large initial investment due to the need for equipment and system facilities, so it is not easy for small and medium-sized enterprises (SMEs), especially the self-employed, to adopt it. Therefore, in 2020, "Bopis Cloud" provided by GLC Corporation, which offers digitization solutions utilizing AI and other advanced technologies, was approved as a target tool for the IT Introduction Subsidy 2020. The No. 1 company in the home delivery locker industry, and "Bopis Cloud," which is linked to the "Full Time Pickup Locker," a locker system from Full Time System, and has been used in food supermarkets in Tokyo to provide a product pickup locker service. The IT introduction subsidy is a program that subsidizes a portion of the cost of introducing IT tools to SMEs and small-scale businesses that intend to introduce IT tools. In other words, SMEs that find it difficult to implement BOPIS from a cost perspective will be able to receive subsidies for the introduction of BOPIS, making it relatively easy and quick to introduce and implement BOPIS. Since this subsidy program started in 2020, there are still few examples and the details of the actual situation are not yet known, so I would like to continue my research in this area.

3 Conclusion

By introducing BOPIS to the "Healthy Menu Pick Up Service" system, which can encourage healthy eating habits among users and take advantage of meal kits that do not waste food ingredients, it is possible to reduce labor costs, develop new customers, and cut

distribution costs, making it easy to invite many companies to join the system. The need for a large initial investment can also be facilitated by IT subsidies, etc. To make it easy to introduce the system, it allows a wide variety of grocery companies, from large to small, to participate in this system, resulting in the protection and distribution of the world's food, and streamlining distribution. However, I would like to continue its research, as it may lack specifics regarding the subsidy system and how the application would be operated.

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The Creation Of New Value In Music

～Establishing “MUSE”, distributing impartial and stable chances～

—Creating new value and chances MUSE Stabilization of Income—

5204 Ryusei Azami

○Abstract

It seems to be rapidly that the use and spread of subscription in commercial music markets such as streaming services have been spreading throughout the world these days. Only few musicians, who are prominent in composing music and writing lyrics appear to obtain profits. This circumstance has been making it possible for them to render their songs one of worldwide popular songs overnight.

However, there are innumerable musicians whose technique and performances are extremely great, whereas their music is not assessed in valid ways due to the circumstances they are surrounded by. A very small portion of musicians get extremely high and insane amounts of money, nevertheless a large portion of musicians (even if they have great competence to make music) can get lower incomes.

Then, I propose founding the music community ‘MUSE’ which consists of numerous musicians on the internet and reforming existing systems lying in the streaming service market. Stabilization of musicians’ income, additionally, reforming management policy of the companies which administer streaming services are the MUSE’s duty. It’s unique to MUSE that it has a fund which supports income insurance for musicians.

1 Introduction

○Background and purpose of this research

Nowadays, the spread of subscription music distribution services represented by various subscriptions and video sharing platforms such as YouTube has made it possible for us, the audience, to enjoy music more easily and widely. However, musicians without large-scale live performances or CD income have nothing that can be called a stable source of income. Although their main source of income is from live music venues, their activities are restricted due to infection control measures, and they are in a difficult financial situation. Therefore, we wondered if musicians of even more genres than now could also have opportunities to earn income through the Internet (e.g., video streaming income, fan club income, etc.), which until now has been considered a source of income only for prominent musicians. The research question for this study was "How can we build a mechanism or framework that can turn

income through the Internet, which has been regarded as an unstable source of income, into a stable source of income?

○Examination of the previous researches

While there have been many studies that consider the existing streaming service system as a problem in foreign countries, relatively few of them have been the subject of research in Japan. In addition, many of the studies only analyzed and criticized the current situation, and this study aimed to break away from such a situation and enter the stage of proposing solutions.

○Research Method

- (1) To understand how much of the CD sales are paid to musicians and to seek improvements based on an understanding of the current situation.
- 2) To understand how much profit the subscription distribution service brings to musicians by analyzing the data.
 - (iii) Devise a system that can generate stable income through a more intimate relationship between musicians and audiences via the Internet, and investigate similar existing systems.
 - (iv) Investigate what kind of system is actually effective and feasible through visits to professors and companies related to the economics department, mainly during the summer vacation.
- (5) Based on (1) through (4), make proposals that will enable us to achieve the objectives of the research.

2 Main Discussion

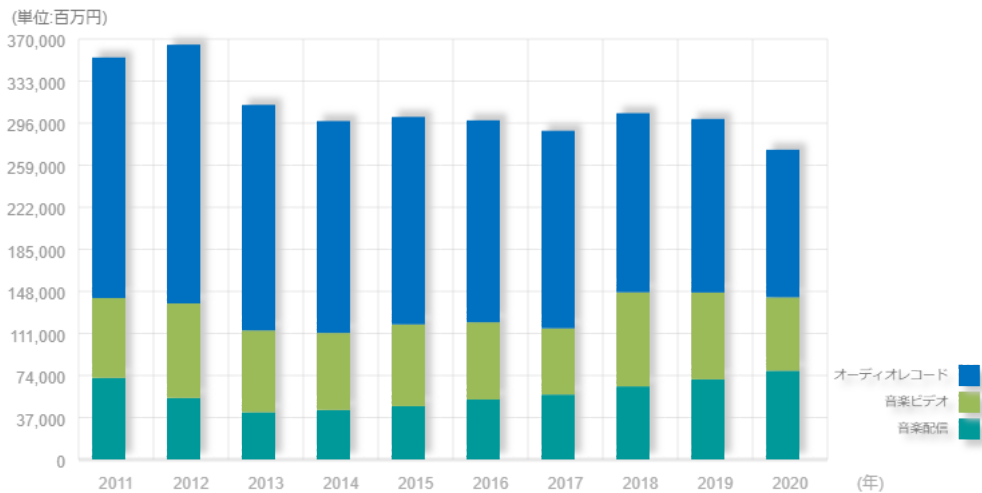
〈1 Transition of the media in the music market〉

In recent years, there has been a noticeable change in the medium of use of music content in the domestic market: fewer consumers are purchasing CDs to enjoy music, and more consumers are purchasing and using music content via digital services such as streaming services. (See Figure 1 (Breakdown of production and sales performance over the past 10 years))

Referring to Figure 1, it is clear that the percentage of actual sales of music distribution (digital services) per year has been increasing, but at the same time, the overall value of actual sales has been declining steadily, indicating that the decline in sales of audio records such as CDs. However, at the same time, the overall value of actual sales has been declining steadily, and it is expected that the rate of increase in sales of music distribution (digital services) is smaller than the volume. Based on the above, it can be said that in order to

increase overall sales in the Japanese music market (not including live performances and concerts), it is necessary to further promote the spread of digital services, a new music usage medium.

(↓Figure1 breakdown of the last ten years' sum production and sales)



Next, there is analysis of alteration in the music playback media in the music market throughout the world.

〈2Alteration In The Music Playback Media In Global Market〉

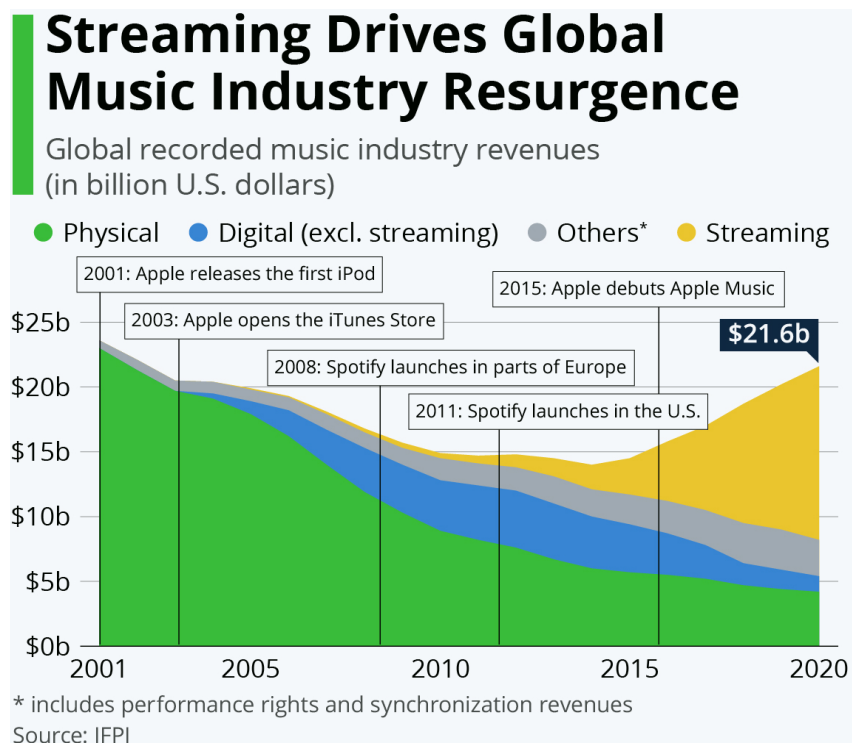


Figure 2 below illustrates the evolution of sales of usage media in the global music market over the past 20 years since 2001. The main focus of this report is on Physical (audio records and other physical media) and Streaming (streaming services) and their overall sales.

Until 2015, the decline in Physical sales was accompanied by a decline

in overall music market sales. The music market as a whole has been on a downward trend in line with the decline in physical sales until 2015. However, since 2015, Streaming has been on a downward trend. Since 2015, however, Streaming's share has increased rapidly, accounting for more than half of the \$2.16 billion (¥216 billion) in total sales.

Figure 2 Streaming Drives Global Music Industry Resurgence

Comparing this data with the data analyzed in Fig. 1, it is clear that the Japanese music market is the largest music market in the world. What is more, It can be seen that the Japanese music market has been slower to adopt streaming services than the global music market as a whole.

Figure 3 shows that CD sales in the U.S. have been declining since the early 2000s, with a graph peaking at approximately 9 million copies sold in the 2000s.

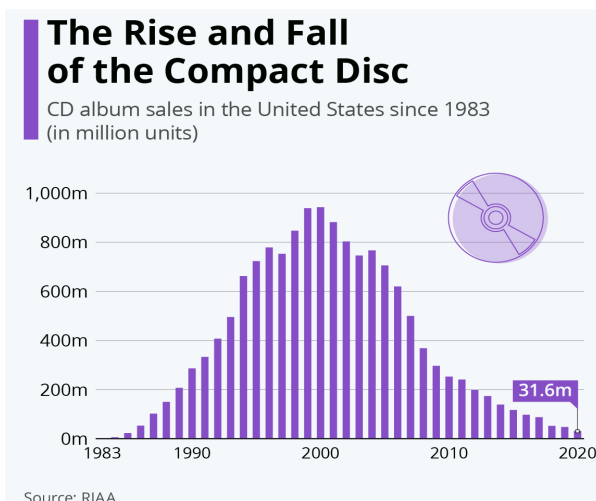
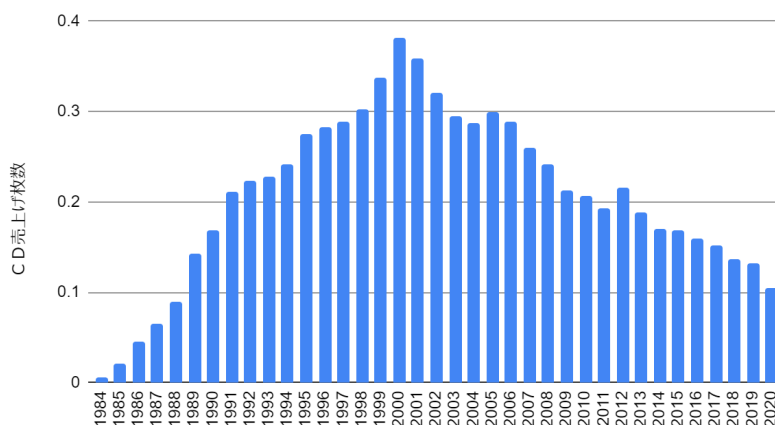


Figure3 The Rise and Fall of the Compact Dis (million sale/vertical axis)
 ↑Figure4 Domestic CD sales(Note1)

Figure 4 above also shows the number of CDs sold in the domestic music market. Compared to Figure 3, the graphs of CD sales trends are very similar, both

国内のCD売上げ枚数の推移 (日本レコード協会より)



domestically and internationally. This suggests that more and more companies in the domestic music market will focus on the development of streaming services, and at the same time, the shift

to streaming services is inevitable in order to keep up with the further development and globalization of the market.

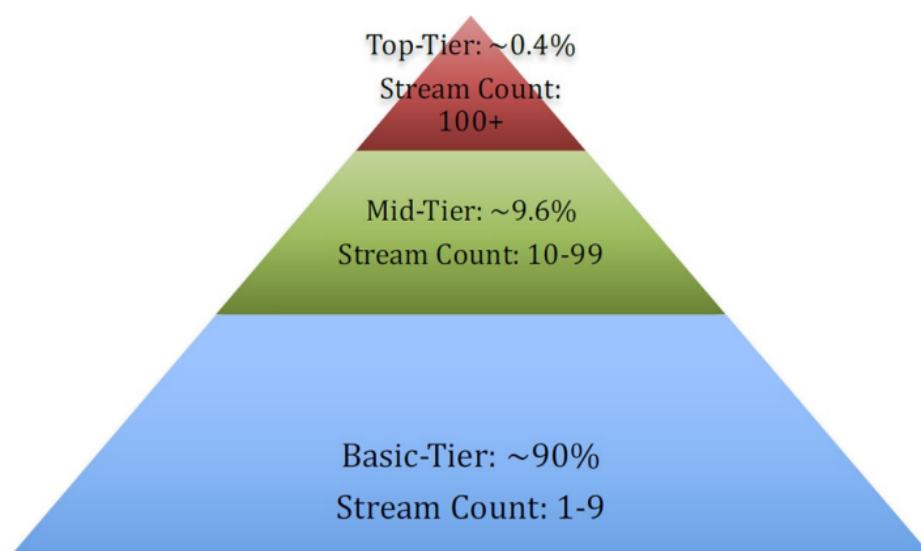
So far, we have analyzed the transition of media used in the domestic and international music market. Next, we will focus on streaming services, which have appeared several times in this analysis.

〈3 Income disparity among musicians in streaming services〉

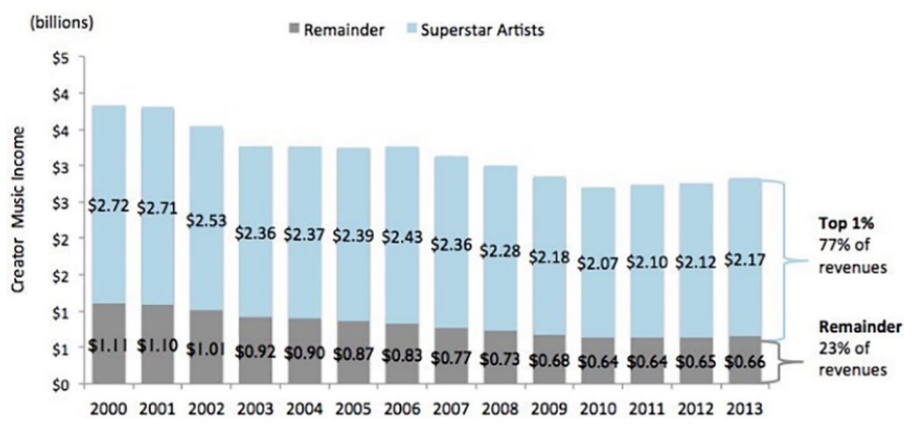
While the market for streaming services is expected to develop in the future, as mentioned above, we will analyze the data here in terms of the distribution of income from existing streaming services.

First, we would like to mention that among streaming services, there is a large difference in the number of times each musician has played a song.

Referring to Figure 5 below, we can see the distribution of play counts for each song when played 10,000 times at random. As can be seen from the graph, musicians with more than 100 plays represent less than 0.4% of the total number of plays. Conversely, we can also see that the majority of songs, less than 90%, have not reached 10 play counts. Although it is only a prediction, it is conceivable that the hits that appear on our streaming service are an even smaller fraction of the musicians in the top tier. All of this suggests that there is a marked disparity in play counts even within streaming platforms, and that playback is concentrated on a few popular songs.



↑Figure5 Distribution across a random sample of 10,000 streams.



↑Figure6 Digitalisation was associated with increasing dominance of top 1% of artists, with streaming came recovery of revenues.

It is also self-evident from Figure 6 that the monopoly in the number of views also leads to a large disparity in income. David Hesmondhalgh of the University of Leeds, UK, the creator of the data from which Figure 6 is drawn, also referred to Figure 6 as follows.

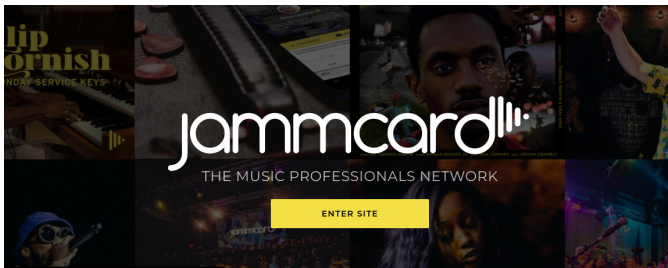
“We might be able to assume that the top 0.4% will earn enough to live on, and that the bottom 90% will struggle. But how many of the 9.6% between them can sustain a living based on music? ”

This again confirms that the disparity in play counts has created a situation where many musicians "cannot live on streaming alone.

From Figures 5 and 6 above, it can be considered that the income given to musicians by streaming services is a monopoly or oligopoly due to the large disparity in play counts and associated income.

Here, we will introduce a case study in the U.S. in which musicians have created a community among themselves and earned revenue without relying on existing streaming services.

〈Jammcard-The music Professional Network〉



Jammcard is the Music Professionals Network. The Jammcard app is a social marketplace for music professionals. (中略)
With the Jammcard Booking feature, any level of musician, from top level pro to aspiring pro, student and hobbyist, is able to book the best music professionals as a work for hire to record, produce, mix, arrange, teach, mentor and/or consult you.

(Note2)

Many of the current members of the Jam Card reside in Los Angeles, New York, Nashville, and Atlanta in the United States, and have worked as support members for famous artists in the past.

In addition, since there is no employment relationship among the Jammcard members, there is almost no hierarchical relationship between the musicians from a financial standpoint.

Therefore, as you can see from the many videos posted on the Jammcard channel on Youtube, there is no promotion focusing only on specific musicians in all aspects of live performances and music production. The titles and remarks of their videos of live sessions always include the names of all the Jammcard members involved. From the above, it can be assumed that the relationship between the jam card members is extremely equal.

It can be said that the Jam Card system adopts a kind of "quality over quantity" system. This system is possible only in the U.S., where many of the world's leading musicians reside and where music culture is strongly rooted.

Here, in this study, we propose the following to improve the aforementioned income disparity problem, based on the Jammcard system as well.

4 The Conclusions And The Perspectives

〈~MUSE-A Music Community-〉

I propose the creation of a music community called "MUSE" to address the issues presented in this study. I believe that the existing streaming service market system cannot avoid the instability of musicians' income. We believe that it is necessary to revamp the existing streaming service system and provide a new system in which musicians' income is stable. Therefore, we decided to establish MUSE as a company that provides a new streaming

service, instead of a company that operates the existing streaming service. From the perspective of management, we have set forth a business structure and three management policies, as well as three specific methods of delivering music that are different from those of ordinary bands and streaming services. The specific details are shown in the figure below.

I propose the creation of a music community called "MUSE" to address the issues presented in this study. I believe that the existing streaming service market system cannot avoid the instability of musicians' income. We believe that it is necessary to revamp the existing streaming service system and provide a new system in which musicians' income is stable. Therefore, we decided to establish MUSE as a company that provides a new streaming service, instead of a company that operates the existing streaming service. From the perspective of management, we have set forth a business structure and three management policies, as well as three specific methods of delivering music that are different from those of ordinary bands and streaming services. The specific details are shown in the figure below.

【MUSE】is a musical community of musicians from around the world.

MUSE is a community of musicians from all over the world who have diverse backgrounds and skills, but are not well-known or well-paid.

MUSE musicians with diverse backgrounds and skills, but who have yet to gain recognition and sufficient income.

MUSE aims to create unprecedented music and distribute it worldwide.

Music that could not be produced by individual musicians alone will be created.

Music that could not be produced by individual musicians alone will be created.



The following are some of the ways in which the existing streaming service system will be revamped to stabilize musicians' income.

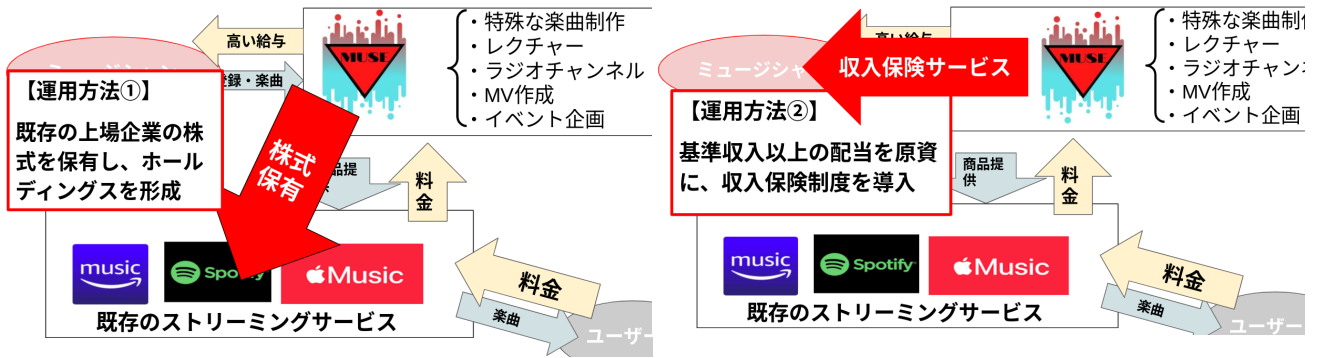
In order to stabilize their income, the following three management policies have been established.

〈Administrative Strategy〉

1) Implement radical market reform in a completely new way.

Implement radical market reforms to revamp existing streaming services, which have destabilized the income of many musicians.

(2) Make existing streaming service operators into subsidiaries and establish a holding company.

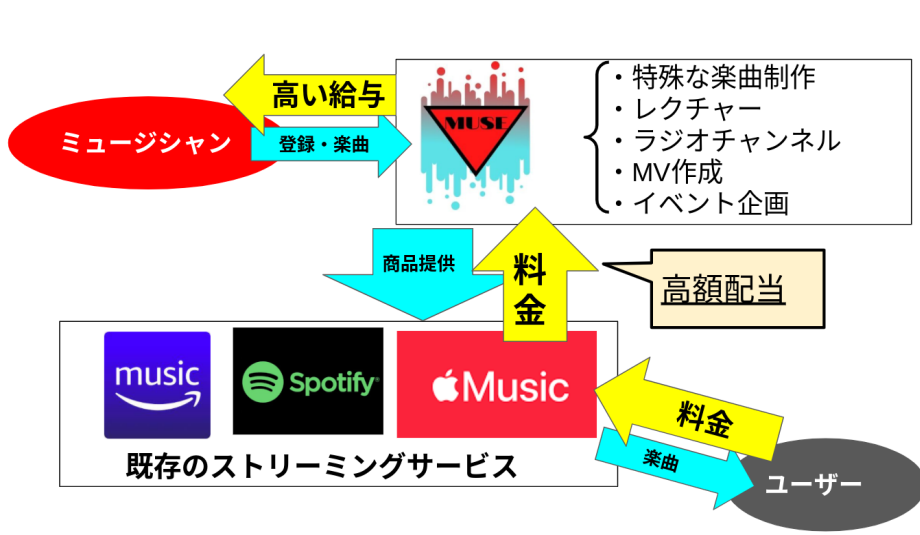


In order to implement these management policies, MUSE's business form will be changed to MUSE is a joint-stock company and a fund (investment trust management company) that implements the income insurance system.

MUSE is proposed to be both a stock company and a fund (mutual fund management company) that implements the income insurance program.

The fund (investment trust management company) to manage the MUSE income insurance and the structure of the income insurance system are explained in a simplified manner starting on the latter half of page 7.

Next, we will explain how MUSE's business is managed in the market based on the diagram.



[The System of the MUSE]

(1) Musicians register with MUSE and provide their own music.

(2) Musicians can add value to their music by producing special music, opening a radio channel, creating music videos, etc. within MUSE, which cannot be done by an individual musician. (The characteristics of music distribution are explained on page 9 and beyond.

(The features of music distribution are explained on page 9 and beyond.)

(3) MUSE will provide high value-added songs to existing streaming services, and in return, MUSE as a whole will earn a large dividend, which will be returned to individual musicians.

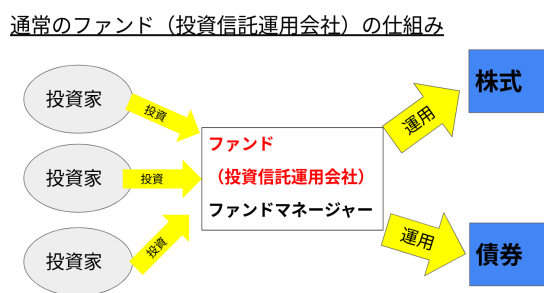
(4) MUSE will use the surplus of the income obtained in (iii) above, after deducting the income to be given to musicians, as a source of funds, and will invest it in the following two ways.

(i) To hold a large amount of shares of a company that operates an existing streaming service, aiming to form a holding company.

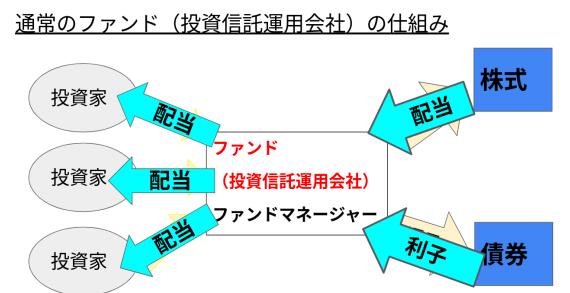
(ii) MUSE will act as a fund to stabilize musicians' income and implement an income insurance system.

Through the above projects, MUSE aims to create a new streaming service market system centered on MUSE.

Next, the aforementioned funds (investment trusts and investment trust management companies) and MUSE's own income insurance system in which MUSE serves as a fund are explained.



(Figure6)

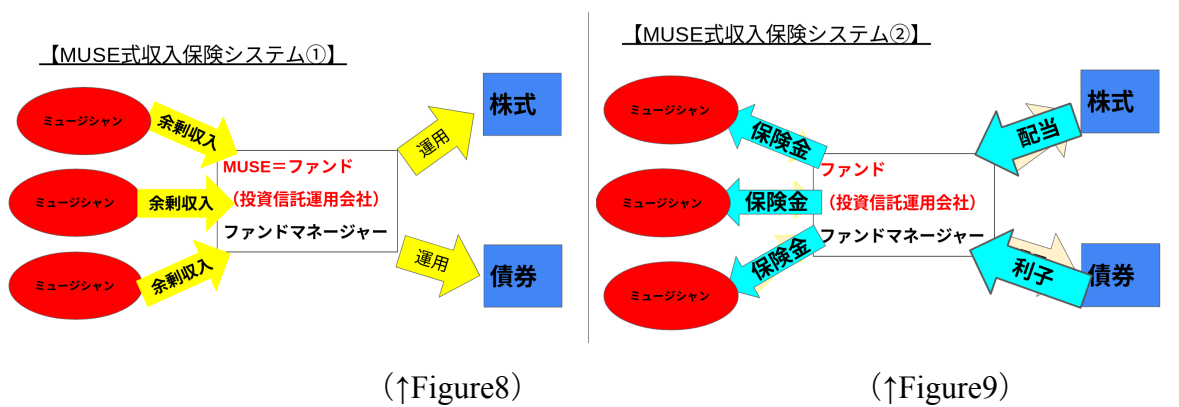


(Figure7)

In mutual funds, the system will be managed as shown in Figures 6 and 7 above.

MUSE manages a large number of investors in mutual funds as musicians, and also manages dividends as income insurance money.

The result of this system is shown in Figures 8 and 9 below. As a result, funds will be managed in a system similar to that shown in Figures 8 and 9 below.

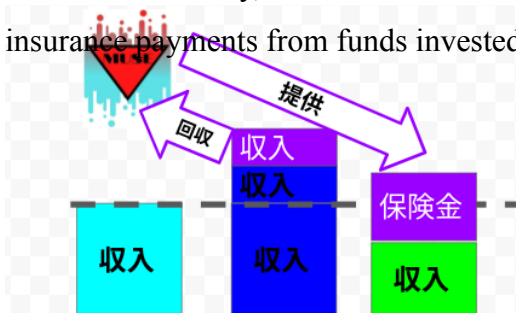


〈MUSE-style Income Insurance System Operation Method〉

- (1) Musicians entrust their surplus income to MUSE, a fund.
 - (2) MUSE, a fund (investment trust management company), manages the funds in a diversified manner through stocks and bonds. (*In this case, the fund invests mainly in stocks and bonds issued by existing streaming service operators. The significance of this method is described below.)
 - (3) MUSE manages the dividends and interest earned by the investment trust, and provides them to the musicians as income insurance money under the income insurance system when the musicians' income declines.
- (ii) In (ii), the management of mainly stocks and bonds of existing streaming service operators has the significance that MUSE owns a large number of stocks of existing streaming service operators and is part of the business of forming a holding company.

〈MUSE-style income insurance program〉

...Each musician sets a certain income standard, and in months when his/her income exceeds the standard, the surplus is deducted from his/her salary as a source of funds to be invested by MUSE. Conversely, in months when their income is below the standard, they receive insurance payments from funds invested by MUSE to supplement their income.



〈**Three features in music distribution**〉

(1) MUSE musicians from around the world selected by MUSE members

MUSE musicians are selected by MUSE members from all over the world through an online nomination process*1.

(2) Regular collaborations with renowned artists

(2) Periodic collaborations with famous artists: In order to increase MUSE's visibility, MUSE regularly invites famous musicians to create music for MUSE, and disseminates their sound recordings. (1) and (3) are not possible without maintaining MUSE's name recognition through (2).

(3) Establishment of a special section for MUSE in streaming services.

(3) Establishment of a special section for MUSE within streaming services (4)
Establishment of a channel or radio station for MUSE within existing streaming services to solve the current situation of monopoly and oligopoly by a few musicians. 2

※1 Musicians who become MUSE musicians are not permanently protected by MUSE, but can continue to belong to MUSE only when they meet certain criteria in periodic voting by MUSE members (MUSE exclusive application or channel subscribers in the streaming system). 2.

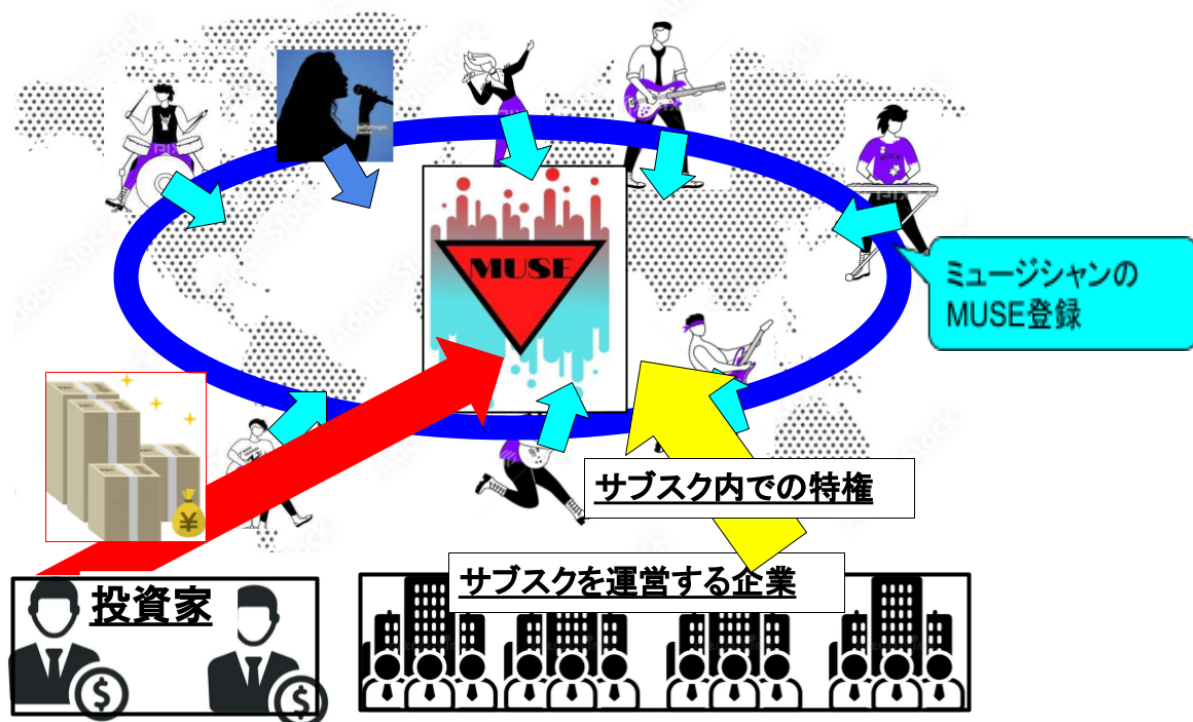
※2 With respect to (3), some may argue that it would be a monopoly or oligopoly by MUSE musicians, but the musicians belonging to MUSE are not immutable. In addition, since MUSE musicians are limited to those musicians who have not yet acquired name recognition

and sufficient income, a rule will be established that those musicians who have been able to acquire name recognition and sufficient income will leave MUSE.

※3 In addition, in order to make the series of systems from (1) to (3) more active and smooth, MUSE will solicit investments and donations to MUSE from investors around the world.

A schematic diagram of the MUSE system is also attached below.

I sincerely hope that this research and the introduction of MUSE will help stabilize the income of many outstanding musicians whose income is unsatisfactory due to the current music market system.



5 Bibliographies

Figure1 一般社団法人 日本レコード協会 生産実績・音楽配信売上実績 過去10年間合計

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Figure2 Statista “Streaming Drives Global Music Industry Resurgence”

(<https://www.statista.com/chart/4713/global-recorded-music-industry-revenues/>)

Figure3 Statista “The Rise and Fall of the Compact Disc”

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Note1 一般社団法人 日本レコード協会 音楽ソフト 種類別生産数量推移

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Figure5・6 Distribution across a random sample of 10,000 streams.

(Is music streaming bad for musicians? Problems of evidence and argument
by David Hesmondhalgh University of Leeds, UK

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Note2 Jammcard

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The way of smartphone and raising children

~how to take advantage of electronic terminal on toddler growth~

5205 Amada Rina

Abstract

Electronic devices have become an indispensable part of people's lives. The use of electronic devices by young children is increasing year by year, and there have been cases where children have developed addictions at the age of five. In light of this, we have been studying two things: to prevent young children from falling into addiction and to prevent them from becoming addicted in the future. Game applications, for example, are mechanistic and involve addictive properties. Since young children become interested in electronic devices out of longing for their parents, the apps do not have to be games. Once they use them, they develop an attachment to games, so it is recommended that only learning apps be used from the beginning. In addition, correct information should be provided by hospitals and other institutions that almost all mothers are involved with on the use of less than 1 hour per day and what can happen to young children if they do not do so. They should also develop the ability to control the use of the device, which will be necessary in the future.

1.Introduction

One 2020 article in the New York Times revealed that the WHO had indicated in 2019 that toddlers under the age of 1 should not be exposed to smartphone screens and that children ages 2 to 4 should not spend more than an hour of "sit-down screen time" each day.

However, a 2013 survey on a website for mothers with young children called Mama Stadium found that smartphone use among 0-, 1-, and 2-year-olds was 24%, 74%, and 85%, respectively, and was particularly high from age 1 and up. In addition, since this data is from a survey conducted in 2013, it is conceivable that the usage rate will have increased even more as of 2021.

The high rate of use of smartphones and other electronic devices among young children is not limited to Japan; in the United Kingdom, we know of a girl who became addicted to tablets at the age of 4 and received treatment. In other countries, cases of tablet and other screen addiction among young children are also noticeable.

It is said that young children are more likely to be affected by electromagnetic waves in some way because they are more sensitive than adults. In addition, the effects of smartphone use on young children include a decrease in time spent in the same position for

long periods of time and time spent playing outside, which can delay the development of physical skills, language and communication skills that are developed through interaction with parents, as well as skills that should be developed through building blocks and hands-on experience. However, when we talked to the experts, they said that the children's physical abilities and communication skills were reduced.

However, experts say that the use of electronic devices by young children is not a bad thing in this day and age, but rather a necessity. I think it will be necessary to strike a balance between the two.

In this way, we know that the smartphone/tablet specifications for young children have negative effects, but the rate of use continues to increase, and if this trend continues, we will see more young children with delayed growth. Even if this is not an exaggerated situation, we need to consider ways to make the most of the growth of young children.

What we did know is that psychological reactance causes parents to struggle when taking electronic devices away from their children, and that the presence or absence of the "power to persevere" affects the stability of a child's personality in the future. We hypothesize that this ability will be useful in the future as "addiction prevention," and we would like to propose a method to nurture this ability.

Since most of the previous studies have focused on the negative effects of the use of electronic devices, and we have not been able to find one that summarizes what we should do about it, this study will examine "how we should deal with it.

In addition, although we would like to cover the world, we will focus on information from Japan when gathering information.

2. Discussion and implications

<The Demand for Electronic Devices>

Today, we are surrounded by a variety of electronic terminals such as smartphones, tablets, and PCs, and it can be said that they are indispensable. In line with this trend, the use of smartphones among young children is on the rise. The figure below shows the results of a survey taken by Benesse of parents with children aged 0 to 6 years old, showing an increase in the use of smartphones, tablets, and other electronic devices between 2013 and 2017.

The reasons given were "when I can't leave my hands while doing housework" and "when I want people to be quiet on trains, in restaurants, etc. This indicates that there are situations in which they have no choice but to rely on their smartphones.

<Adverse Effects of Using Electronic Terminals

We investigated the possible negative effects of using electronic devices. There were not only major ones, but also various others, such as vision loss due to prolonged use, and bone distortion due to poor posture. Bright light interferes with the production of melatonin, which may lead to sleep disorders. The sleep disturbance also decreases serotonin (a neurotransmitter in the brain), which may lead to poor concentration, stress disorders, and depression.

However, these symptoms can be caused by "prolonged" use of the device, so it is best if the device is not used for long periods of time. According to the Benesse survey mentioned above, most respondents answered that they use the device for about 15 minutes, which is a time period with little concern about adverse effects. However, we can see that some of them use the device for many hours, such as four hours. In some cases, however, such children are more likely to become addicted. Incidentally, there is a case in the United Kingdom where a five-year-old child became addicted to tablets, and the addiction became so severe that he or she needed treatment. It is necessary to inform parents of the correct knowledge to prevent addiction and to protect these children.

< What knowledge is necessary to prevent addiction? >

The knowledge necessary to prevent addiction includes the adverse effects mentioned earlier. In addition, since prolonged use is one of the causes of addiction, the definition of "prolonged use" is defined as one to two hours. According to the Vision Council of the United States, when children use tablets for two hours, they experience at least one of the following symptoms: headache, mood swings, body aches, discomfort in the eyes, and difficulty concentrating. The WHO also states that children between the ages of 2 and 4 should not be exposed to screens for more than one hour each day.

It may help parents to control their children by providing specific numbers as well as adverse effects.

And, one of the main reasons why young children are interested in electronic devices is that they see their parents using them and admire them. Therefore, parents themselves need to refrain from using electronic terminals in front of young children.

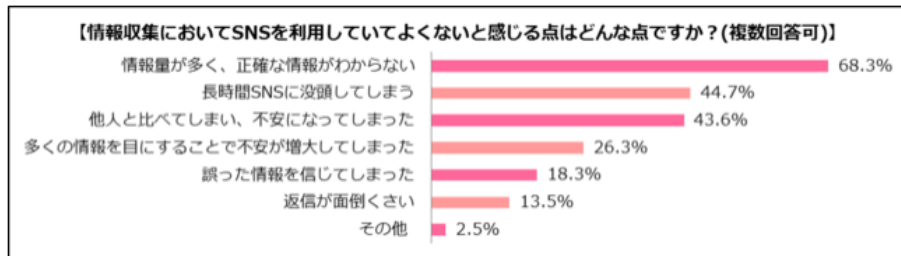
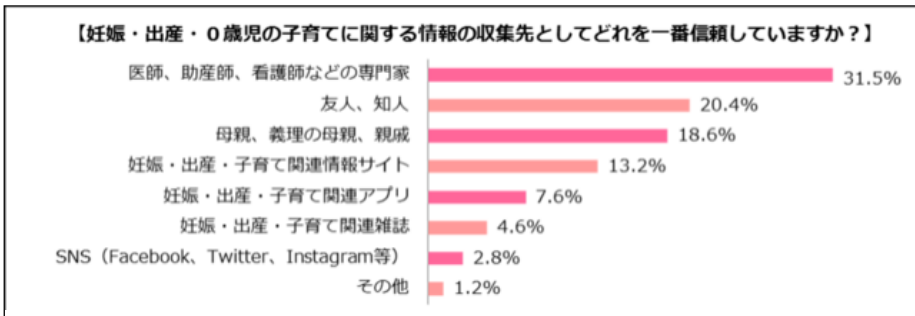
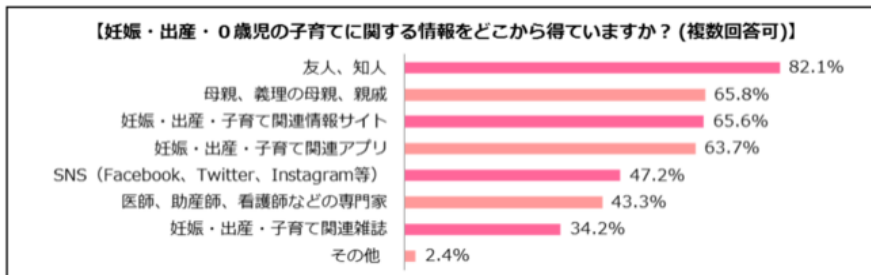
In addition, there are some points to note. When lending electronic devices to young children, they should limit the apps they allow them to use. Developers of games and other apps want users to use them for long periods of time because advertising is a source of income. This makes them more addictive. As mentioned earlier, the reason why young children become interested in electronic devices is to imitate their parents, so by lending

educational applications instead of lending highly addictive applications from the start, it is possible to prevent addiction and make the most of electronic devices for growth.

<How to get the right information out to the right people>

In order to disseminate such information, it is necessary to provide "correct" information to many people. First, we looked at the ways in which mothers gather information about child-rearing in Japan (see figure below). (see figure below) There were two main types of information: from acquaintances and from the Internet, such as websites, apps, and SNS. However, information from experts can be said to be more accurate than information from acquaintances. There are also disadvantages to gathering information on SNS, such as the sheer volume of information and the difficulty in judging whether the information is accurate.

Results of Questionnaire on Child-Rearing Information



Based on the above, we thought it would be a good idea to provide opportunities for parents to attend classes and for hospitals to present information. Since not all parents may

attend the parent-teacher class, it would be more effective to present information from the hospital, which is expected to be visited by all parents.

<On fostering control skills>

However, the fact is that games are so addictive that even after only a few minutes of use, young children develop a strong interest in them and demand to play them immediately. In fact, we have heard of actual experiences where children have become addicted after only a few minutes of use, and have become impatient. Therefore, we felt that it was necessary to address not only children who are likely to use electronic devices for long periods of time, but also all children who are likely to use electronic devices.

In the course of our research, we were told by Professor Riki Osawa that "the specification of electronic devices for young children is not a bad thing in this day and age, but rather a necessity." In the course of our research, we received comments from two professors, Riki Osawa and Asami Sato, that "the use of electronic devices by young children is not a bad thing in this day and age, but rather a necessity. However, the existence of electronic devices is a matter of course in today's world, and children will eventually use them. Therefore, it can be thought that if we can master the use of electronic devices from a young age and manage the time of use, it will be useful not only in childhood, but also when they grow up to be adults. In fact, an experiment on patience conducted by an American psychologist revealed something. The experiment involved leaving children alone in a room with a marshmallow in front of them and telling them that they could have another one if they could hold out for 15 minutes, and then measuring how long they could hold out. As a result, some children could not tolerate the marshmallow for even a minute, while others managed to tolerate it for 15 minutes. The major difference between the two groups was the ability to divert their own interest from the object. The children who were able to endure for less than a minute tended to have more problems in their daily lives than those who were able to endure for a minute or less. These results indicate that "patience is not whether or not one can hold still, but whether or not one can devise ways to divert interest from the subject," and that "children who cannot hold back need training because they cannot control their own behavior.

<How to train>

There are several habits that are not acquired instinctively from birth, but are acquired through training, such as brushing one's teeth and using the toilet in a certain place. For example, brushing one's teeth, using the toilet in a certain place, etc. The first is a habit for most people, but some people have difficulty in remembering to do it even as adults. The difference between the first and the second is that the fear of social death if they fail to do so may be the root of the difference.

In light of this, I thought that something that has an underlying fear, such as "don't do this," would be more effective than training people to think positive thoughts for their own benefit, such as training a dog to get a reward.

If such training were to be conducted in each home, it would place a heavy burden on parents who try to limit or train their children due to psychological reactance (when a child's desire is limited by others, the desire becomes stronger in response), and the practice would not be sustained. For this reason, we would like to propose that the practice be conducted in kindergartens and nursery schools. We believe that kindergartens and nursery schools would make it possible to conduct training from a sense of "joint responsibility" without placing a burden on any one person.

For example, we dare to make time to use electronic terminals in kindergartens and nursery schools and set up a time to play with them. Then, a group of several people would be formed, and if everyone could quit playing in time, they would receive stickers or other points. The idea is that if they don't quit, their teammates will be inconvenienced, so they can take action not only for themselves but also to avoid inconveniencing the team. However, we do not know if it works or not, or if young children are interested in the stickers and other points in the first place, so we will be looking into this very carefully in the future.

Another thing I would like to raise is to "let them choose" when to use screen time, a feature that is included in the phone. The feature at the moment allows parents to set the amount of time their child can use the phone, and after a 5 minute notification is sent, the app will be forced to end use when the time limit is reached. Depending on the type of limit, they can add their own usage time, but this could lead to a state of dependency. A feature we would like to add to solve this problem is to provide a "Continue or Quit (use)" question before the app becomes unavailable. However, if the parent chooses to continue, the parent will be notified of the time limit and will be able to use the app once permission is granted, thereby preventing prolonged use. This feature allows young children to "make their own choice," which reduces psychological reactance and allows them to control their own screen time in the future.

3. Conclusion

First, with the increasing use of electronic devices by young children worldwide, parents need to be given correct information in order to reduce the number of children who become addicted. The way to do this is to convey information from credible and mostly accessible institutions such as hospitals that almost all people are involved with when giving birth, or parents' classes conducted by those hospitals and other institutions that may be hopeful but where most people have the opportunity to be heard.

We would also suggest training in kindergartens and preschools as a way to prevent future addiction. The advantages of doing this at such institutions are that it provides an opportunity for people to be aware of their surroundings and make an effort, rather than for themselves, or that it is easier to continue because it does not place a burden on the parents.

As a future issue, we would like to consider who among them would present the information at the hospital and how, while considering its effectiveness. We would also like to examine the current educational content and time allotment in kindergartens and nursery schools, and consider ways to provide training that does not place a heavy burden on these facilities, as well as specific methods of providing such training.

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Globalization in Music

~Lessons Learned from K POP's Global Expansion~

5206 Kosuke Amito

Abstract

Music is something that can be found in every country in the world, so I think it's very good content that people around the world can enjoy. Therefore, KPOP, the pioneer of the world's music market, boasts tremendous popularity in various countries and is able to succeed in globalization. The reason for globalization is that KPOP has overcome various hurdles. The biggest hurdles are money and language. We have been conducting research centering on the application "Vlive" (a video distribution service limited to Korean artists) that takes these into account. JPOP will learn from this, and globalization will lead to further development of the country. Therefore, JPOP also proposed to create a video distribution service. The goal is to think of a policy that can achieve Goal 11 of the SDGs, "Building sustainable communities," by globalizing the music of each country.

1 Introduction

Music is something that exists in every country in the world, so I thought it would be very good content to equalize the people of the world. Also, even if you don't understand the language of music, I think that what you feel by listening to and playing music is common in any country. KPOP is now enjoying tremendous popularity in various countries, and globalization is progressing. For that reason, I wondered what kind of things we should do to make the characteristics and cultures of various countries known globally. I believe that music from each country can advance to the world and globalize by incorporating various harmonies into various cultures, such as what kind of music is conveyed in that country. Therefore, we will investigate previous research and consider new improvement measures based on the content of last year's research. (Will also do fieldwork if possible.)

2 Discussion and implications

KPOP, which has successfully globalized, has been showing rapid growth since 2008 both domestically and in the export sector. And although Japan was more popular at first, now it has an overwhelming difference. K-POP was able to enter the global market by clearing the five hurdles of "money", "time", "distance", "language", and "regulation", and a "barrier-free" environment where you can get addicted as long as you have the internet.

Because there is In the KPOP world, the idea of freemium, which allows content to be released for free is pervasive. In addition to being able to watch MV etc. outside the country, it is also distributed with multilingual subtitles at the time of release, which was mentioned earlier, provides basic services and products for free, and charges fees for advanced and special functions business model. On the other hand, many Japanese music videos cannot be seen outside the country due to copyright protection. Therefore, there are many fans of Japanese artists in South Korea, but they cannot watch unauthorized videos. In acquiring overseas fans, the difference in such an environment is getting bigger. So I turned my attention to an app. It's an app called Vlive. Vlive is a video distribution service created by NAVER, a major Korean Internet company that is also famous as the parent company of LINE. It is attracting attention as a video distribution service that delivers behind the scenes. In addition to videos, V Live also actively distributes in real time, and the app supports many languages such as Japanese, English, and Chinese. The fact that there are many supported languages is very important to increase the number of global fans. It has three main features.

- (1) A service that specializes in Korean artists.
- (2) A system that allows you to not miss your favorite artists' streams.
- (3) You can watch live streams with Japanese subtitles on Vlive.

It should be. Certainly, there are good things about JPOP. For example, a special feeling in a limited space. JPOP has information that can be obtained by joining fan clubs, etc., and while having videos and photos is a disadvantage, it can also be taken as an advantage. Because it makes you feel special. It is possible to make a big difference between those who are in the fan club and those who are not. And I think there are more than a few people who prefer this format. However, in this research, while globalization is the goal, it is important to make it open once, and I think that it is an essential condition for globalization. If it is not opened, it is conceivable that the Japanese music world will continue to maintain the status quo or decline. And above all, the globalization of JPOP is considered to be a far-fetched problem.

Therefore, what I propose is to create a distribution application that utilizes freemium, etc, limited to JPOP artists. The difference between the Japanese fan club format and the Japanese fan club system seen from overseas is that overseas fans can view member blogs, photos, and videos without joining the fan club. The same can be said for KPOP, but the only difference is that domestic people can also watch special videos and photos without joining the fan club. As I said earlier, this is a big problem. Therefore, there should be an increasing demand for creating a video distribution service that allows anyone to easily watch videos

using the freemium concept. To explain this video distribution service in detail, similar to Vlive, we will add multilingual subtitles so that even coastal fans can use it easily. And we aim to be a distribution service specialized for JPOP artists, which distributes special videos and photos related to the artist that cannot be seen normally.

3 Conclusion

By creating a video distribution service that specializes in JPOP artists with a freemium and multilingual subtitle system, it is possible to overcome major hurdles such as money and language. Therefore, I think that it is a necessary measure for globalization. I believe that by creating an environment that everyone can easily access, we can achieve Goal 11 of the SDGs, “Building sustainable communities.”

4 Citations

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2022/10/11

Spreading barrier-free with para-sports

~To improve recognition and attention all over the world~

5207 Yuwa Ikeda

Abstract

When we learned that the Tokyo Paralympics was held in 2021 and that attention to para-sports is low even in developed countries, we considered activities to raise the profile of para-sports around the world to enable athletes to compete satisfactorily. First of all, we suggest that the lack of support for para-sport athletes should lead to more support from companies. To this end, we propose to increase the number of para-sport competitions and make them famous by having small and medium-sized companies support them, and to create a good cycle by creating an environment where athletes can be active by further increasing their support. In addition, we propose that opportunities be created for them to experience para-sports in physical education or other classes, because we believe it is important to make the younger generation aware of the appeal of para-sports. And they should be introduced to boccia, sitting volleyball, and other sports that cost as little as possible in terms of equipment and other aspects.

1 Introduction

With the Tokyo Olympics and Paralympics to be held in the summer of 2021, we have seen many articles on para-sports on TV and in newspapers. Among them, we learned that there is a lack of recognition and attention for para-sports compared to FIBA sports, and also, there is insufficient support for para-sports. As the host country of the Paralympic Games, this is a problem, so in the last year, we began research to raise the level of attention and increase support for athletes and the Games. We focused on Japan in the last year's research, but there are many countries, including developed countries, where awareness of para-sports is low, and we thought it would be worthwhile to conduct research on the same theme for the world so we decided to continue this research.

The ultimate goal of this research is to create an environment in which athletes can compete satisfactorily and to increase their motivation by considering what activities should be undertaken to raise awareness and attention of para-sport worldwide and to increase support for para-sport. Furthermore, by having para-sports athletes perform well in

competitions and in other places, they will give courage and hope to other people with disabilities, eliminate prejudice and discrimination against people with disabilities that still remain in the world, and spread barrier-free sports all over the world.

In researching previous studies, we found a study entitled "A Study on the Recognition of Words about Sports for the Disabled" by the School of Sport Sciences at Nihon Fukushi University. In this study, we found that words related to the Paralympics are more recognized than other events such as the Deaflympics, and that disparities are occurring between events. Since this study was conducted in Japan, it is not clear what the status of awareness is worldwide. It also does not describe the activities that should be undertaken in the future. Furthermore, since the study is limited to the recognition of the word "para-sport," it does not clarify the level of recognition other than the word such as rules or whether there is sufficient support from companies, etc. Therefore, there are many points to be investigated and considered in the future. Based on this previous research, we set two hypotheses and they were formulated: ①In order to eliminate the disparity in attention between the Paralympics and other para-sports events, it may be necessary to promote events other than the Paralympics. ②the attention of the Paralympic Games will increase if more people experience Parasports. The reason for the second hypothesis is that it is important for Able-bodied people to actually experience Para-sports. Since there are not many people who actually participate in Para-sports, it is possible that people will not find it appealing and that it will not attract attention.

In addition, a previous study in English examined the effects of incorporating para-sports as a physical education class in school education to deepen students' understanding of physical disabilities, and found that having students experience para-sports in physical education changed their awareness and attitudes toward disabilities in a positive direction.

First, we research the current level of awareness of para-sports in the world through the Internet, books, and interviews using e-mail. In doing so, we gather information by using the "Nippon Foundation Paralympic Support Center Paralympic Study Group," a website that researches the Paralympics and para-sports. As for interviews, we visited the Gunma Sports Association for the Disabled last year and learned about various issues and problems of para-sports in Japan. We would like to visit him again this year during the summer vacation to hear about the current situation of para-sports in the world, which we can understand because we are directly involved in para-sports. In addition, although we conducted research on Japanese para-sport athletes and rules in last year's study, there is still a lot of information

about the world as a whole that we do not know, so we continued this research this year. In particular, we investigate the rules of the competition in detail, as it is essential to know them when researching para-sports.

Based on what we have learned from these activities, we consider the issues of para-sports in the world today before the interim presentation, and decide on the direction and objectives of the activities to increase the attention and support for para-sports, which will be presented at the end of the presentation. After the interim presentation, the participants will consider and propose specific details of their activities. When considering activities, the team hopes to obtain opinions from actual para-sport athletes, if possible, while also utilizing winter vacation, etc., so that we can propose activities that will be more effective.

This year, we consider activities to raise the profile of para-sports in greater depth than last year's research, such as how to create an environment where SMEs are more likely to support the sport and what kind of para-sports experience is more efficient and effective in schools.

2 Discussion and implications

First we did research on the Internet. We found the data that the percentage of respondents who would like to go to the Tokyo Olympics to watch the games in person was about 43% for the Olympics and 20% for the Paralympics, a significant difference of about twice as much (Figure 1 and 2).

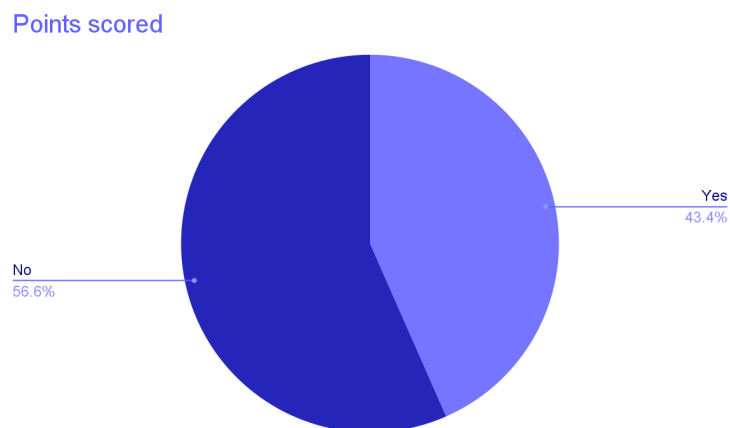


Figure 1 people who want to watch Olympic Games at the actual places

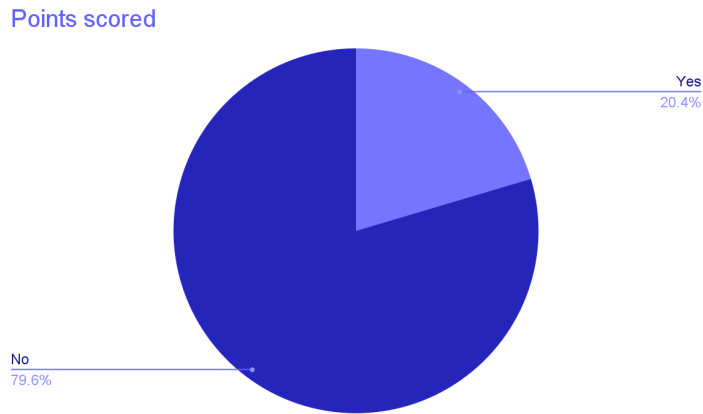


Figure 2 people who want to watch Paralympic Games at the actual places

For the question “How many events they would like to watch at the Tokyo Olympics and Paralympics”, about half of the respondents answered five events for the Olympics, while 30% answered five events for the Paralympics, and 30% answered one event, indicating a large disparity here as well (Figure 3).

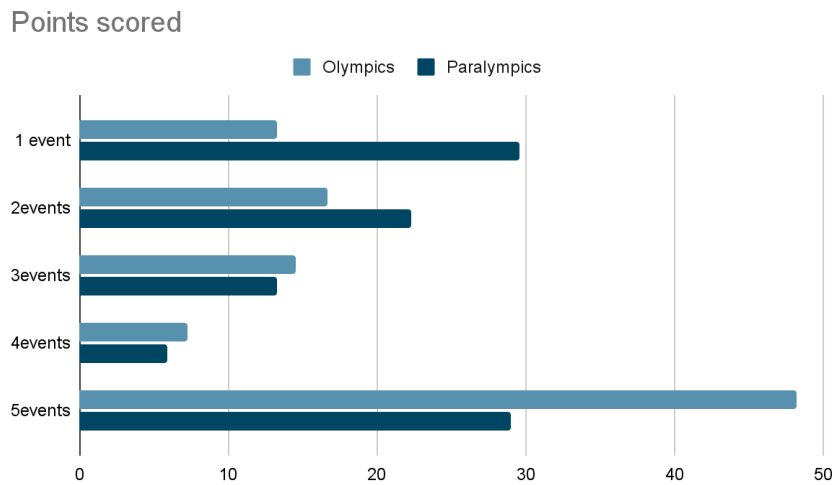


Figure 3 How many events people want to watch at the actual places

Although these are information on para-sports in Japan, the recognition of para-sports in the world is low even in developed countries, with 98.2% in Japan, 71.1% in the U.S., and 74.7% in South Korea, as to whether they know the word "para-sports" itself, so I thought it worthwhile to conduct research on the subject worldwide.

In addition, the recognition rate for each event was 96.4% for the Paralympics, while 6.9% for the Deaflympics for the hearing impaired and 6.3% for the Special Olympics for the

intellectually disabled, showing that there was a large difference by event. I thought it was necessary to do so.

In order to bridge the gap in recognition from one event to another and to increase the number of events, the support from companies for the events and athletes is needed first. Hitachi Solutions, Ltd. is an example of a company that supports para-sport athletes outside of the Paralympics. This company has established its own para-sports team, Team AURORA, and provides financial support through the provision of equipment and tools, as well as psychological support through the establishment of a consultation service for athletes. We did interview on email to Hitachi Solutions, we learned that in order to support the Olympics and Paralympics, it is necessary to spend billions of dollars in sponsorship fees to become an official partner, and only large companies with financial resources can do so, making it difficult for smaller companies to support the Olympics and Paralympics. Without being an official partner, rules regarding ambush marketing are created that place severe restrictions on the use of logos and athlete photos. Therefore, it was decided that it was necessary to increase the number of competitions outside of the Paralympics to make it easier for companies to support these events and raise their visibility. In addition, Hitachi Solutions found that supporting para-sports has created a sense of unity among employees, improved its image as a global company through athletes' successes around the world, contributed to employment of people with disabilities, and contributed to society through its support of sports.

Since there are many advantages to supporting para-sports, It is clear that it will be easier for small and medium-sized companies to participate in supporting para-sports by increasing the number of non-Paralympic Games and by increasing the visibility of these Games. As SMEs begin to support para-sport events, the scale of the events will increase, and larger companies will join in supporting these events. As more companies participate in supporting para-sports, athletes will have an environment that facilitates their success, and more companies will start supporting more tournaments, which will create a good cycle.

In addition, we should change the younger generation in order to raise the visibility and attention of para-sports and maintain it. In last year's study, we suggested that more attention should be paid to para-sports in moral education textbooks, but in this study, we thought that simply learning about para-sports was not enough to raise the level of attention, and that it was important to have children experience para-sports in order to make them more interested. Therefore, we thought that children could experience para-sports in their physical education classes at school, which would raise the level of attention. However, para-sports often involves the use of special equipment, and the cost makes it difficult to incorporate

para-sports into some classes. Therefore, in order to keep costs low and to make the classes more conducive to understanding people with disabilities, we thought it would be better to use para-sports events such as boccia and sitting volleyball, which use the same equipment as able-bodied sports or do not require a lot of equipment.

3 Conclusion

For these things, in order to create an environment where it is easier for para-sport athletes to compete and to raise awareness and attention through corporate support. We recommended that more competitions other than the Paralympics be held and that small and medium-sized companies participate in supporting these competitions to raise the profile of these competitions and increase the number of companies supporting them. And para-sports should be experienced in physical education classes at schools in order to change the consciousness of the younger generation towards para-sport. In addition, we propose that the younger generation's awareness of para-sports be changed by having them experience para-sports in physical education classes at schools, and also, in consideration of the burden on schools, para-sports events such as boccia and sitting volleyball, which use equipment that is not different from that used for FIBA sports and do not require a lot of equipment, be included. We propose the inclusion of para-sports events such as boccia and sitting volleyball, which do not use the same equipment as FIBA sports or do not require much equipment.

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Racism of beauty industry

~World trends and the future~
ID5209 Name Ito Nanami

Abstract

In 2019, an incident in which a black man was killed by a white police officer in the United States was a major trigger, and interest in racism spread more around the world. The cause of racism is a combination of psychological and historical factors, and it is difficult to solve. On the other hand, the beauty industry is also required to have diverse needs, and it is important to provide services that are not related to gender or race. In this study, we consider what can be done to solve racism in the beauty industry, but the specific problems that are occurring are black employment and whitening beliefs. In conclusion, I came up with the idea of changing Shiseido's project of teaching makeup to people who are worried about their faces due to injuries or illnesses, to teaching makeup that suits each person, regardless of race. I thought that this would help people to gain self-confidence from their complexes, improve their image, and revitalize their participation in society. People also need to be flexible with the aesthetic sense of others.

1 Introduction

Background and Objectives of the Study

I think that racism is one of the current world issues that is attracting attention. In 2019, there was news that a black man was killed by a white police officer. This made the situation of racism more visible. Among them, Asian discrimination also appeared about racism that I began to hear newly. The impact is that in the United States, it was thought that China was deeply involved in the outbreak of the new coronavirus. When I heard about it on the news, I felt that the issue of racism was no longer a trivial matter, so I became interested. I would like to go abroad in the future, and when I heard about the current situation of discrimination, I was scared. Because I thought that I would spend every day in an unpleasant mood and that I would be hurt. At the same time, when I was looking at an article about beauty that I was personally interested in, I found issues such as discrimination in the beauty industry. For example, there are many women in the hospitality industry, making it difficult for men to enter. There are only cosmetics that suit white people. Such a situation can be seen. There may be various scenes where differentiation is reflected, but this time I would like to think about diversity using the beauty industry as a concrete example.

Status of Previous Studies

According to The Beauty Ideal The Effects of European Standards of Beauty on Black Women, black women are particularly vulnerable to the influence of European beauty standards, which, largely in the form of internalized self-loathing, affect the lives of black women, especially dark-skinned women. It shows that the trajectory may be adversely affected.

Research Methods

①Research the current of racial discrimination (especially the current state of discrimination against blacks and Asians) I want to use books, newspapers, and the Internet. Focusing on the historical background, the number of people affected, and the causes. I would like to pay attention to reasons why people come to be discriminated against.

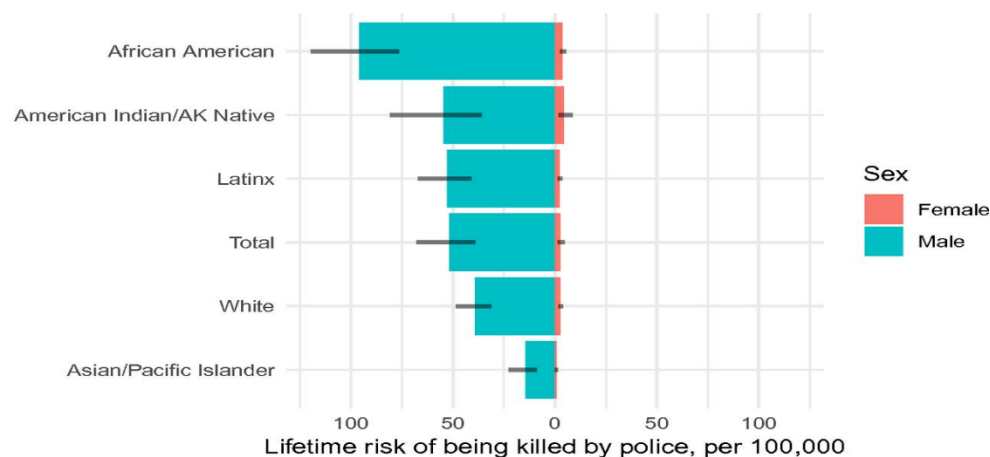
②By looking research, I confirm how far discrimination has been resolved in the world today and where it has not been resolved, and find problems. I also focus on what kind of prejudice leads to discrimination. I want to understand in detail how to solve racism in the world.

③Using information, think about how to get many people to recognize each other. When thinking about the beauty industry, think about how opportunities to assert diversity can be realized.

2 discussion and implication

I thought there were few opportunities for mutual understanding and compromise in the discrimination that creates a state of mutual rejection with misunderstandings. I think it's a significance of the study so I want to think about this.

Racism is a culture that persists in the U.S. and the rest of the world, and the data from the PNAS Volume 116 article (Figure 1) shows that black men are 2.5 times more likely to be murdered by the police than white men.



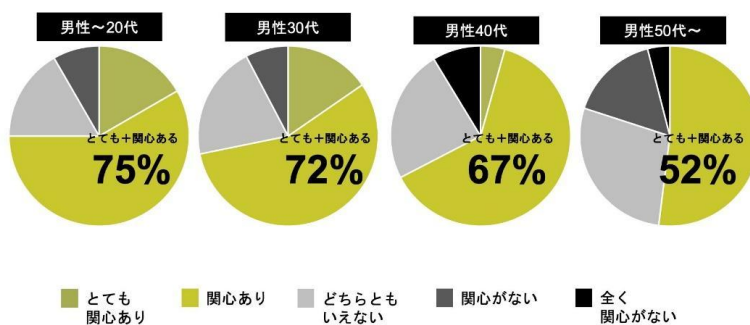
figure①

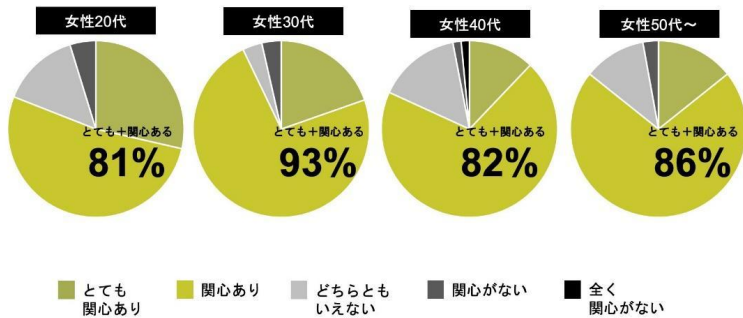
More attention was focused on May 25, 2020, when George Floyd, a black man, was killed by former white police officer Derek Shovin in Minneapolis, Minnesota, in the Midwest. The defendant Shovin was tried to murder, and the jury returned a guilty verdict. The city's residents rejoiced because a guilty verdict in the murder of a black man by a white police officer was quite an epoch-making event. However, it is said that many black citizens still have little improvement in their real lives.

Racism still comes from images and prejudices, and once these become entrenched, they are difficult to remedy. The power of images is so strong that we are almost unaware of the various influences, what we call "temptations," that we are inundated with images. When we look at the flood of images in the world, collect data on them, and analyze them from a certain perspective, we can see various aspects, such as historical, cultural, and social biases. I also felt that humans have an instinct to protect themselves by looking down on those who are different from themselves and trying to gain an advantage, and by not trusting what they do not understand, which also leads to this.

Racial discrimination occurs in some unexpected places. The beauty industry, for example. I love beauty, and I first came across an article about racism and beauty in a beauty article I happened to look at. The beauty industry is currently attracting a lot of attention, and the chart below shows the fact that the number of beauticians is increasing and men's interest in beauty is also growing, so we can see the fact that needs are diversifying and people are becoming more interested in beauty.

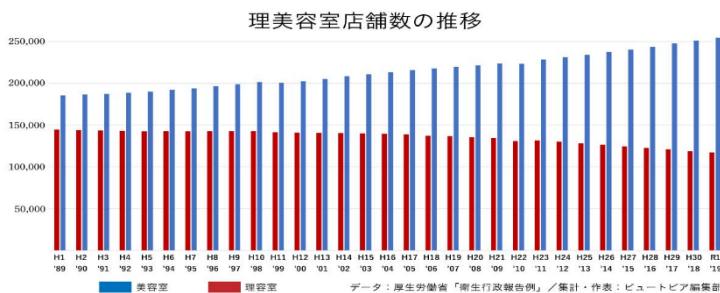
あなたの美容に対する関心度を教えてください。





Then we looked into what specific discrimination exists. The study found that there is a lack of black employment and an excessive practice of whiteness beliefs. In fact, a cosmetics brand called Glossier has only about 9 percent African-Americans out of 250 employees at its headquarters. Many women in Asia and Africa also suffer from the opinion that the whiter the skin, the better, and that this promotes a sexist concept of beauty. In fact, in the region, billboards and other signs emphasizing skin-whitening products were placed prominently in towns.

One of the major challenges for the beauty industry, which is attracting the attention of young people, is to attract future customers. The reason is that, as can be seen from Figure 3), the increase in the number of barber and beauty salons has led to a gradually increasing level of competition. In order to further develop the industry, it is necessary to meet the needs and desires of many people regardless of gender or race. Therefore, new perspectives are needed to break the conventional concept of beauty standards, and improvements in racial discrimination are required as soon as possible.



Non-white beauty influencers are currently making their mark around the world. Dipika Mutyala is disseminating makeup tips to South Asian women. She posted a video explaining how brown-skinned women can use red lipstick to diminish dark circles in their eyes, which garnered more than 10.6 million views. Bekah Alexander, President of Socialite, added, "Brands used to only ask that one of the people they used in their campaigns be a non-white

influencer or creator, but now they want to increase that number. There is no longer a generic approach where a single black woman is considered a diversity campaign. The egalitarianism of the surface is no longer valid." Others would like to see more diversity in beauty.

3 Conclusion

I considered applying the Shiseido Life Quality Makeup project to promote activities for people on the receiving end of discrimination. This project teaches makeup to people who suffer from bruises, vitiligo, burns, scars, and changes in appearance due to cancer treatment. With this project, Shiseido works on product development, total makeup proposals, and various other support activities for people with deep skin concerns. If we act as a forum for disseminating makeup for various races, it will provide an opportunity for non-white people to discuss their own racial complexes and gain confidence.

But by directly telling the world what they are, there will be a message that can be conveyed to others for the first time. We should also tell the world to fight the world directly, like the BLM movement that took place in the U.S., which I first introduced. And another thing that I noticed I looked into it is that some people think that makeup and tools are just as bad as whitening, but for those people who need those things, they feel like they are being denied their own likes. All people should feel the way they like and wear makeup, so the world needs to be more flexible about the opinion that there is no right answer to beauty. Finding solutions for this is a challenge for the future.

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Literary works and Education

Reading Habit for All Children

5210 Ono Miku

Abstract

I have been conducting this research from the perspective of "how can we help children around the world develop the habit of reading?" In addition to direct approaches to develop the habit, creating a situation in which children naturally pick up books by focusing on their living environment is a way for children to enjoy books without the stress of having others point them out. Also, consider approaching adults, as children tend to pick up books when their parents are book readers.

Research shows that elementary school students in the U.S. are more aware of reading than middle and high school students, and they believe that reading education should be provided not only at school but also at home. However, FSM users also tend to be less interested in reading.

I considered two main approaches: one for children and one for parents and teachers. The approach for parents is to provide opportunities to talk about books with their children, but no concrete plans have yet been made for the approach for children.

Discussion and implication

Last year's research was aimed at Japanese students, mainly junior high and high school students, and considered ways to increase their exposure to literary works. In this year's World Exploration, we would like to use what we researched and thought about last year to think about how we can help children around the world develop the habit of reading. However, the world is a big place, and measures will vary from country to country, so we would like to consider the region as well.

Conclusion

According to "Children's and Young People's Reading Habits and Preferences," elementary school students tend to be more aware of books and reading than middle and high school students. But this is because most junior and senior high school students are busier with studies and club activities than they were in elementary school, and this is something that cannot be helped, so it is not the focus of this study. And this trend is not only true in the

U.S., where this paper was written, but also in Japan. Elementary school students are also more likely to say they want to do something about reading not only at home but also in school education. However, Free School Meals users tend to have a lower awareness of reading than children who do not use FSM (Free School Meals), and are less confident about their own reading skills. From this, it can be said that the desire to enjoy books increases when one has the financial and time resources to do so. We need to find a way to accommodate FSM users as well as ordinary households.

Two approaches can be taken to solve this problem: to the children themselves and to their parents and teachers. If we only tell children to read books, they will be forced to read books, and there is a possibility that they will start to dislike books rather than develop the habit. And since children in families where parents read tend to learn from their parents and become more active in reading, approaching adults is important.

The approach for parents and teachers is to increase opportunities to talk about the book with their children. If people enjoy the opportunity to talk, they will be motivated to read more books to broaden their topics, which will naturally lead them to read more books, and adults will also have more opportunities to read books to talk, thus creating a good cycle. Even though the genres of reading may differ, communicating and thinking together about what you are reading can help you develop communication skills and the ability to think. However, I have not yet found an effective way to approach children and have not yet found an effective way to disseminate that approach.

Conclusion and Future Prospects

I came up with a solution from two perspectives: the approach to the child and the approach to the parents and teachers. For adults, the idea is to increase opportunities to talk about books with children. The idea is not only to read and explain the material in school classes, but also to talk about the books read at home. This method is also effective in terms of showing children as well as adults reading books, as this is not possible without them.

Regarding the next step of approaching children, we are currently unable to come up with a concrete plan. There are activities to donate picture books for children overseas and to deliver Japanese picture books with stickers with translated characters, but these are not realistic because they are meaningless if the children do not read them, and some of them are difficult to read with stickers due to the increased amount of text.

We have not yet found a concrete and realistic way to disseminate these methods, so we will consider this in the future.

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The who, what, why, where and when

Christina Clark and Amelia Foster National Literacy Trust

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Diversifying Stalking

—Aiming to enhance the provision of information—

5211 Kasahara Ayano

Abstract

At present, the range of stalking becomes wider and wider. The number of damages is increasing. But owing to people's severe lack of knowledge about stalking caused by the paucity of places to get correct information about stalking, the number of damages is not decreasing at all. So I suggest carrying out the preventive education in compulsory education as one of the means to solve lack of knowledge. Under the present conditions, most countries don't carry out preventive education. In addition, there are few people who have rich knowledge about specific damage and regulatory laws. It is important to gain correct knowledge about stalking from a young age in order to eradicate the damages of stalking in the future. If preventive education is implemented, it will add new value to the educational field in the sense that it will make a significant contribution to crime prevention. In the future, I would like to take the situation into consideration and flesh out a proposal for implementation of preventive education.

1 Introduction

Goal 5 of the SDGs is "Gender Equality." It includes the following two points.

- (1) To eliminate all types of violence and exploitation, including sexual trafficking, against women and girls
- (2) To ensure that acts and practices that physically, mentally, or sexually harm women and girls are not practiced

Regarding stalking, I have noted that there are many female victims. In my opinion, stalking is one of the obstacles to achieving Goal 5 of the SDGs which is set to ensure that all people enjoy peace and prosperity. Therefore, I began this research in order to increase the number of situations in which women's safety is protected and to decrease women's disadvantage over men in terms of stalking victimization. The research question in this study is as follows.

- What attempts should we make to remedy the "lack of knowledge" that is hindering the reduction of stalking victimization?

2 Discussion and implications

Currently, the number of consultations about stalking in Japan is on a slight downward trend, but the number remains high. According to the National Police Agency's survey, in 2020, there were 20,189 victims, 58.3% of whom were in their 20s and 30s.

Women accounted for about 90% of the total number of victims. In foreign countries, as in Japan, there are many reports of female stalking victims.

For example, according to a 2018 survey, women accounted for about 80% of stalking victims in Mannheim, Germany, and furthermore, about 60-70% of American women have experienced stalking. These (see **Figure 1**) indicate that the majority of stalking victims are women, and that women are at a tremendous disadvantage over men when viewed from the perspective of stalking victimization.

Besides, in recent years, with the global development of information and communication technology and devices such as satellite-based positioning systems, stalkers have been stalking people in a variety of forms around the world. This has led to a marked increase in the number of victims, especially among young people. Moreover, there are many stalking behaviors that cannot be policed because they are beyond the regulatory scope of the law.

In Japan, Tokushima Bunri University and Fukushima Prefectural Police had been working together for three years since 2018 on a joint research on stalking. They ascertained the actual damage and interviewed the perpetrators. Thereby, a professor in Tokushima Bunri University pointed out the dangers lurking in people's consciousness and said, "People need to know that their willingness to easily forgive your partner is an incentive to become a victim of stalking after the relationship ends." According to their survey, there is a certain number of people who tolerate stalker-like behavior. The professor also said, "Preventive education on stalking is rarely provided. So it seems that people's knowledge is not sufficient. It is necessary to remind them not only about the perpetrating behavior, but also about how to avoid becoming a victim, such as not accepting the easy installation of GPS applications on their smartphones." From this information, I have paid particular attention to the presence of a certain number of people who condone stalking-like behavior and the fact that there is little preventive education. In Japan, the most common relationship between victims and perpetrators in 2020 was "dating partner/former dating partner," which accounted for more than 40% of the total. In other countries as well, most of the studies on stalking in the past few years have investigated the relationship between "dating partners" and "spouses," so it can be expected that a large number of victims are found in close relationships, as in Japan. Furthermore, the lack of prevention education means that people do not have the correct and sufficient amount of knowledge about stalking victimization. With little knowledge, victims don't report incidences because they do not know how to deal with the damage they have suffered. In some cases, they are uncertain whether the damage they have suffered really constitutes stalking and find it difficult to talk to others about it. It is unknown whether people around them who do not have sufficient knowledge the same as they are will be receptive, making it harder to say that they have been victimized. Lack of knowledge causes these multiple adverse effects. In addition, they are more likely to be submissive or tolerate stalking, especially if the other person is someone they are close to, such as a dating partner. This results in encouraging stalking behavior. On top of that, if the perpetrator is not equipped with the correct knowledge, he or she may be completely unaware that the behavior he or she is taking is stalking and may repeat it unconsciously. Under these circumstances, the number of stalking victims will further increase in the future due to perpetrators who do not realize the seriousness of what they are doing and victims who tolerate. While the number

of victims would increase, the number of consultations with the police and other authorities would decrease.

Based on these factors, I have come to the conclusion that the biggest problem regarding stalking victimization is people's "lack of knowledge."

3 Conclusion

As noted earlier, the most significant problem related to stalking victimization is the lack of knowledge of people, including perpetrators, victims, and those around them. Additionally, as a result of the diversification of stalking behavior due to the spread of SNS and other factors, the percentage of young people in the total number of victims and perpetrators is increasing. Regarding this condition, I offer the following suggestion in an attempt to remedy the lack of knowledge.

That is “ to carry out preventive education at the stage of compulsory education.”

Currently, most countries do not provide preventive education on stalking, and most people do not have sufficient knowledge about specific damages and stalking control laws. Information and communication devices are accessible not only to adults but also to young children. No matter what age group they belong to, they are likely to become stalkers or victims, even if unintentionally. In order to prevent further damage and to eradicate stalking, it is important for them to gain correct knowledge about stalking from as young an age as possible, with the future in mind.

But when it comes to preventive "education," the target is limited to children. So I hope that prevention education will trigger a conversation about stalking in the home and create opportunities for adults and children to think about it together. There should be various ways to encourage discussion, such as worksheets distributed by the school for parents and children to work on together. Additionally, I hope that this will also help adults realize that the seeds of stalking damage are lurking around them and encourage them to change their words and actions. Moreover, if preventive education is implemented, it will add new value to the educational field in that it will contribute significantly to crime prevention. I hope that this will also provide a clue to solving the serious teacher shortage that has become a worldwide problem.

The process required to make this happen and how to add stalking prevention education to the various compulsory education curriculum are still uncertain.

In the future, I would like to concretize the proposed preventive education implementation and come up with a better plan to improve people's lack of knowledge.

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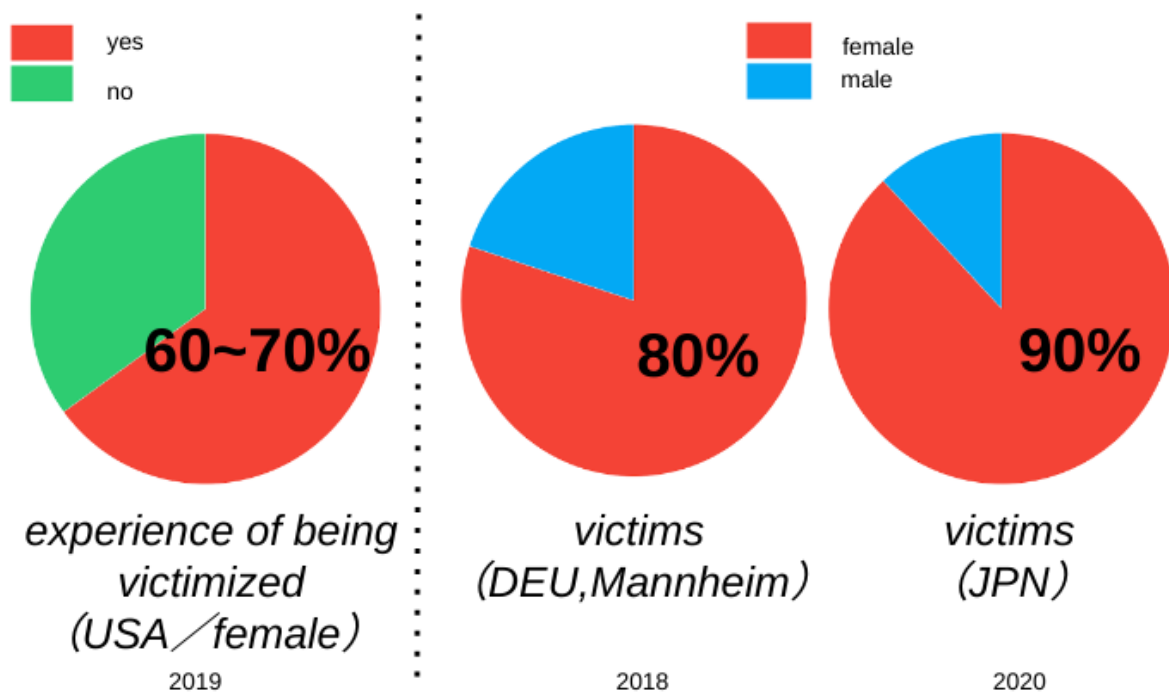
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▲ Stalking Victimization Around the World (Figure 1)

Learn English through Playing Video Games

~Cross-Cultural Exchange Online~

5213 Ryu Kayama

Abstract

The present study was undertaken in order to research (and presume) "What is the effect, merit and demerit of using video games as means of learning English".

After making a research plan based on preceding studies and experiences, I communicated with a foreigner.

The merit is that you can improve English proficiency if you have basic English language skills. The demerit is that speaking with native speakers without basic English skills can be counterproductive.

From this, it will be said that in order to recognize games as a means of learning, it was necessary to change the usage of games to be more effective for beginners and intermediate level English users or above. For example, for beginners, English learning games or online English classes using video games can be used.

For intermediate or above, as mentioned earlier, communicating with foreigners is a means of learning.

If this method becomes common, native English speakers and English learners (they will be in the same position as teachers and students) will be able to recruit each other through the Internet and casually converse with foreigners. This will not only improve English proficiency, but also lead to cross-cultural understanding.

1 Introduction

From my interest, last year I also researched the game as a theme. Furthermore, I was able to learn new words and expressions in English (especially local English, such as young people's language and slang) when I played foreign games which do not yet have Japanese translations and communicated with English-speaking people in online games.

On the other hand, in Japan, there are few opportunities to contact with live foreign languages and few people are willing to learn English, so it would be possible to learn foreign languages through games, and furthermore, by finding value in games other than

entertainment, it would be possible to eliminate prejudice against games and to learn about foreign countries in a casual way.

2 Discussion and Implications

○Discussion

The merit is that you can improve English proficiency if you have basic English language skills. One of the sites¹ says that "Think about what you are going to say in English in advance. The most important thing is to think about what you are going to say in English beforehand and read those expressions over and over again until they come out of your mouth in a slurred manner. Of course, grammar and vocabulary are essential to be able to produce accurate sentences. You should be familiar with grammar at the level of university entrance examinations and learn at least 3,000 words. If you take these steps, you will be able to talk smoothly when you speak with a native speaker."

From this, it can be seen that it is not English beginners who should learn English by using games to talk with native speakers, but those with intermediate level English speakers.

Therefore, can't beginners of English learn by using games? The answer is "yes they can." Like the example in the article², there are examples of students using games as a tool to speak with English teachers instead of speaking with native speakers.

The demerit is that speaking with native speakers without basic English skills can be counterproductive. For example, if you speak with a native speaker without basic skills, of course your grammar will be jumbled, and your expressions will be difficult to understand. However, the native speaker will try to understand what you are saying, and they will reply in a way that you can understand, so you can communicate with them. This means that you will never be able to improve your English without reviewing the expressions and grammar, and you will always be in the habit of using wrong English.

○Implications

Based on these evidence, in order to recognize games as a means of learning, it was necessary to change the usage to be more effective for beginners (those who are concerned about compulsory education level English) and intermediate level users (those who have mastered high school level English).

3 Conclusion

The answer to the research question is the same as above. The use of games as a means of conversing with native English speakers can be applied not only in Japan, but also in other non-English speaking countries around the world.

If this method becomes common, native English speakers and English learners (they will be in the same position as teachers and students) will be able to recruit each other through the Internet and casually converse with foreigners. This will not only improve English proficiency, but also lead to cross-cultural understanding.

For English beginners (especially students in countries where English learning is not compulsory), "English learning games" should be used if games are to create learning opportunities. However, there are problems in developing countries where games cannot be played, or in poor countries. From now on, I would like to consider measures for developing and poor countries.

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¹『お母さん、今日は英会話の日だよね！』 フォートナイトで学ぶ“eスポーツ英会話教室”が小中学生に人気

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Sports Nutrition for the Elderly

~ To stay strong in old age ~

ID 5214 Name: Yuzuki Kambe

○**Abstract**

I researched this topic because I was interested in sports nutrition. As a result, I want to spread sports nutrition's knowledge to elderly people. In order to spread it, certified sports dietitians teach everything about sports nutrition to elderly people in public spaces, for example public hall, city's gym. Content which teaches sports nutrition consists of knowledge about food and exercise which is good for health. Not only that, we would like to use city gymnasiums and other facilities to hold team competitions several times a month to create an environment where people can exercise while communicating with each other. In the end, I want elderly people to stay strong and to live long happily.

1 Introduction

First of all, I decided to start this research because I was interested in sports nutrition. And while researching sports nutrition last year, I realized that sports nutrition is not only for athletes, but also everyone alive has the right to learn about it. So I decided to focus my research on the elderly due to the increasing average age of the world's population. I would like to think about what kind of diet and physical activity the elderly need in order to make their lives easier, and how they can apply what they have learned about sports nutrition in their daily lives. Young people can learn through the Internet, but the elderly are not used to using social networking services or do not know whether they can put what they learn into practice even if they learn through social networking services.

2 Discussion and implications

(1) What is Sports Nutrition?

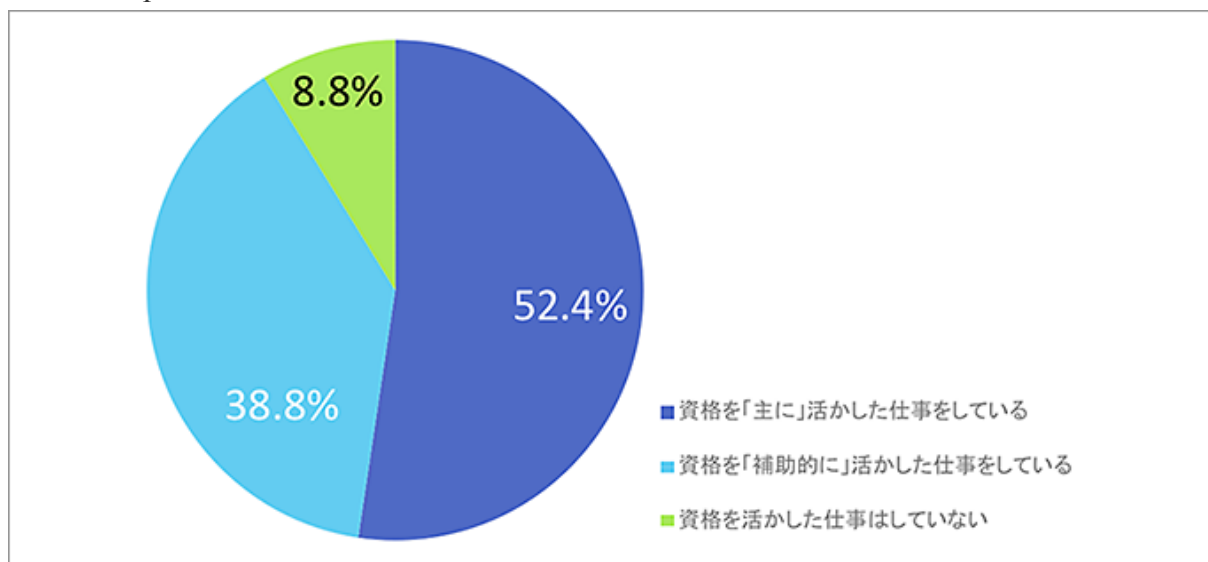
Sports nutrition management refers to nutritional management focusing on the intake of food, beverages, and supplements by arranging theories based on sports nutrition and sports medicine science to suit individual objectives and bodies in order to improve or enhance performance. Many people associate the word "nutrition" with the use of nutrients for the recovery or prevention of disease. But nutrition is defined as the process of taking nutrients into the body and using them to sustain life. In other words, nutrition and its study are necessary for "living" regardless of disease. Furthermore, sports nutrition is not just for athletes and sports enthusiasts, although it is often thought of as something special for sports. It targets all people in our daily lives, from those who use their bodies in their professions, to office workers in their prime, to the elderly who are striving for health and longevity, and even small children. People study sports nutrition to improve their performance. However, performance here refers to all the various movements, thoughts, and expressions that people make with their brains and bodies. It is necessary for all people and refers to life itself. In other words, sports nutrition is nutrition for vitality.

(2) Effects of sports nutrition

The number of full-time registered dietitians involved in nutrition management and education

for college athletes in the United States is increasing. The challenges that registered sports dietitians have had to deal with are inadequate macronutrients, inadequate micronutrients, and too many macronutrients. A survey of 123 NCAA (National Collegiate Athletic Association) Division I college athletes without a sports dietitian on their knowledge of sports nutrition found that the level of knowledge judged to be adequate was 75%, while the average score was 56.9%, and only 12 were above 75%. There were no significant differences by team, level, gender, or previous nutrition education. 196 student athletes were also surveyed about their nutrition knowledge and regrets about past eating and drinking habits. It found that the mean scores were 48% for males and 49% for females, and less than 25% for questions related to supplements, all of which were below the lower limit representing adequate knowledge. No association was found between nutrition knowledge and nutrition-related regrets, suggesting that even if the study subjects were knowledgeable, student athletes need a lot of help in changing their behavior. A study assessing the dietary intake and eating habits of NCAA Division I female college athletes found that most nutrients were found to be not being met by the athletes. Total energy intake and carbohydrates were below the lower recommended limits, only 9% met energy requirements, and an additional 73% did not regularly eat breakfast. In a study comparing college athletes who received educational intervention by a sports dietitian with college athletes who did not receive position-matched educational intervention, weight change was similar between the two groups, but energy intake, protein, and carbohydrate intake were significantly higher in the intervention group, and body fat percentage was significantly higher in the intervention group. The intervention group also showed a significant decrease in body fat percentage. The number of shuttle runs increased in the intervention group. (3)

Certified Sports Dietitian



Currently, only about half of sports dietitians are working as certified sports dietitians. 40% are only able to use their certification as a supplement to their work. The following are the places where certified sports dietitians work: research “institutes” (24%), “freelance” (16%), “contract food service companies” (10%), “hospitals and clinics” (8%), and “government” (8%).

3 Conclusion

In order to create a place where the elderly can easily learn about sports nutrition, it is important not only for the elderly who are unfamiliar with SNS, but also for the local community. We would like to utilize facilities such as community centers, as we believe that it is important to have a relationship with the local community as well. For an environment where people can exercise, we would like to use city gymnasiums and other facilities to hold team competitions several times a month to create an environment where people can exercise while communicating with each other. After the physical activity, we would like to hold a cooking class so that everyone can enjoy healthy meals together, and have them learn how easy it is to prepare them and use them in their daily lives. I would like to utilize a certified sports nutritionist to teach this. In this way, I think I can make the most of my certification as a certified sports nutritionist.

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Invincible Sauna

~ Make a Super Drink After the Sauna ~

5215 Riko Kikuhara

Abstract

I like saunas simply because I sweat a lot and feel refreshed. In fact, from previous research, saunas have countless benefits for both physical and mental. Students are busy studying for tests and assignments every day, fathers are working hard to provide for their families, and mothers are juggling housework and childcare while also working hard. To relieve this fatigue, many people sleep long hours, eat sweet foods, or sing as much as they can. However, few of us go to the sauna. Therefore, we have been conducting research to make saunas more accessible and to let more people enjoy the beauty of saunas. We will expand on this research and study how to use saunas more efficiently. Specifically, I would like to propose the most powerful drink to drink after a sauna. Wouldn't it be great if saunas spread around the world and more people around the world could lead healthy, clean, and stress-free lives?

1 Introduction

The reason for setting the theme is that I myself like saunas and want more people to know about their advantages and to use them in a better way. The popularity of saunas is gradually increasing. This is a good thing, but there is a problem. However, there is a problem: what to drink after a sauna. What if you drink as much beer as you want after a good sweat in the sauna? The body releases a lot of waste products and absorbs them very easily, so instead of making you healthier, you may be putting a burden on your body. Water and sports drinks are the mainstream, but I think the best post-sauna drink in my opinion is a smoothie. I will consider this as a hypothesis and test it. First, I will research what ingredients the body needs and give some candidate ingredients. Next, I will actually make a smoothie using those ingredients and evaluate the taste. Do not judge the taste on your own, but rather, take in the advice of family members and listen carefully to the opinions of people of different ages. Once the best smoothie has been created, we will consider how to market it, using precedent as a guide. As for prior research, there is some research on the history of sauna, how it works, and its benefits, but no research on post-sauna beverages. The goal of the research is to make sauna use more effective for sauna users. The research question was

"How can saunas be used to improve health?" The research question was set to find out why people do not or cannot use saunas as much as they would like, and to develop a solution for each subject. The research subjects were people from all over the world.

2 Discussion and Implication

The results so far, first, have examined the value of sauna: first, it makes you feel better; second, it makes you feel better; third, it makes you feel better; and fourth, it makes you feel better. Sauna bathing improves blood flow, which means that every inch of the body is nourished. During a sauna bath, about twice as much blood flows throughout the body as during a normal bath. Second, it reduces mental fatigue. The warmth of the body and the loosening of stiff muscles, which relaxes the muscles pressing on the blood vessels, eliminate heart palpitations and pounding sensations. Third, it is effective for skin care and beauty. When blood flow improves, the gastrointestinal tract becomes more active, which increases appetite and makes food taste better. This creates an effective cycle of delivering necessary nutrients and eliminating waste products. In addition, being in a warm space opens the pores of the body more than usual and invites the general removal of keratinized cells, toxins, and other things that "pollute" the surface of the body.

Next, let's talk about comparisons with the rest of the world. We looked at "Germany" and "Finland," the two largest sauna countries in the world. German saunas are ultra-entertaining, theme park-like spaces. The concept of water baths is unique, with lukewarm pools and Jacuzzis mainly in the 20°C range instead of cold water. This is based on the "health hot bath method," which gradually increases the swing of the temperature range. Finnish saunas are simple, everyday spaces. It is a simple space that is as soothing to the daily routine as a bath is to the Japanese.


I also recently visited Kyogashima Natural Hot Spring Yutori. Yutori is one of the largest one-day natural hot springs in the Kanto region and is so high quality that it has been likened to a "beauty spring." In addition to five types of outdoor baths, five types of indoor baths, three types of saunas, bedrock baths, and private baths, there is also a restaurant, esthetic salon, manga space, massage corner, and other amenities. This time, I focused my research on what kind of drinks are available after the sauna. I found that there were several places that sold beverages that I had never noticed before, although I had been there several


times before. There was a cold water server just outside the sauna, bottled milk, coffee milk, hydrogenated water, and regular vending machines in the changing rooms, black vinegar blueberry, pomegranate vinegar, and yuzu vinegar in the common rest area for men and women, and six types of smoothies at the kiosk. I took a conscious look and found it to be more extensive than I had expected. However, I noticed one thing here. Even if they sell such good products, it is meaningless if there are few visitors. People who don't stop by the rest areas and stores would not notice them. Therefore, I thought that I would like to sell the smoothies in a place where many people can see them right after exiting the sauna.



At the interim presentation, we received a variety of advice. Some of the questions we received included, "What is the benefit of doing this research? What are the benefits of this research? After the interim presentation, we addressed these suggestions one by one.

The advantage of doing this research is that you can become healthier very efficiently. In one sauna (sauna → water bath → outdoor air bath), one plastic bottle, or 500 milliliters of water and many electrolytes and nutrients are lost. The sauna is a great way to get rid of the water and nutrients. If you repeat the sauna three times, you will lose 1.5 liters of water. That is why it is important to hydrate before, during, and after a sauna. However, drinking anything is not enough. Be wary of drinks that are high in caffeine and have diuretic properties. For example, coffee, green tea, alcohol, and cola drinks may have the opposite effect. On the other hand, vegetable juices high in sodium and potassium, coconut water high in electrolytes, minerals, vitamins, and protein, and milk high in calcium and protein are examples of recommended post-sauna drinks. Of course you lose water when you sweat a lot in a sauna, but there are other nutrients that are lost besides water. (See table below)

① 水溶性ビタミン 	不足時の症状
ビタミンB群	食欲不振、疲れやすい、だるい
ビタミンC	免疫力の低下、疲れやすくなる、ストレスへの抵抗力が低下

② ミネラル 	不足時の症状
ナトリウム	めまい、ふらつき、食欲減退、脱力感、脱水症状、筋肉の痙攣、精神異常など
カリウム	血圧の上昇、筋肉の痙攣、脱力感、食欲不振、反射の低下、不整脈など
カルシウム	骨粗しょう症
マグネシウム	血栓症、むくみ、高血圧、体温や血圧の調整機能の低下、イライラ感
鉄	貧血、頭痛、めまい、立ちくらみ、息切れ、動悸

Therefore, it is not enough to just drink water. Drinking water → fluid level becomes low → body tries to restore fluid level and removes water → dehydration! Water is unexpectedly dangerous. Therefore, sports drinks are generally recommended because they absorb water efficiently and maintain ionic balance. However, these drinks do not contain enough of the nutrients listed in the table above. Therefore, we came up with some original smoothies.

(1) Pineapple

Pineapple contains carbohydrates, vitamin C, dietary fiber, and vitamin B2, and eating pineapple every day can relieve constipation and improve skin tone. The enzyme bromelain (bromelin), which is unique to pineapple, has anti-inflammatory properties and has been shown to reduce various symptoms of the common cold, including sore throats and coughs!



(2) Orange

Oranges are also known for their strong effect on metabolism. Hesperidin, a type of vitamin P that strengthens blood vessels, improves blood flow, reduces swelling, and contributes to increased metabolism. It contains a large amount of vitamin C. Vitamin C also helps iron absorption, improves immunity, and increases resistance to viruses and bacteria.



(3) Grapefruit

Grapefruits contain a type of polyphenol called naringin. It is the component that gives grapefruit its distinctive bitter taste. It has a strong antioxidant effect and is expected to be effective in preventing aging and lifestyle-related diseases. It also suppresses appetite and is recommended for dieters. In addition, it can be expected to improve blood circulation and suppress allergies. The pink type contains β -carotene (carotene) and lycopene. Lycopene is a precursor to β -carotene, so it will eventually convert to β -carotene, which in turn converts to vitamin A in the body.



3 Conclusion

As for taste, pineapple juice is the thickest, sweetest and tastiest. However, it is difficult to drink because it contains some fiber. Orange juice is sweet and sour, refreshing, and easy to drink. Grapefruit juice has a slight bitterness, but it is refreshing and makes you feel refreshed after drinking. In the sauna, you sweat a lot and lose a lot of water. Simply drinking water will not replenish the water that is lost along with the sweat. Therefore, drinking 100% fruit juice that you make yourself will promote your health. After sweating in the sauna and relieving stress, you can take the best nutrients and become healthier. I don't think I could feel happier.

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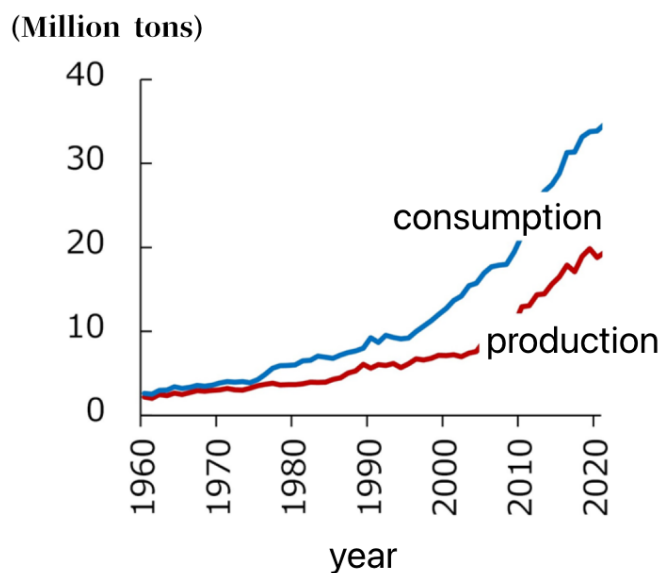
Abstract

Africa has a low food self-sufficiency rate due to the difficulty of growing crops. This is due to the nature of the land, which has few crops that can be grown, and the low level of agricultural technology and productivity. Therefore, we wanted to popularize NERICA rice. I wanted to promote NERICA rice because I thought that if it could be popularized, self-sufficiency would increase and exports would also flourish. Dispatching technicians is essential to popularize NERICA rice, but we believe that this alone will not be enough to ensure stable production beyond that point. Therefore, we propose smart agriculture.

Introduction

Japanese people eat rice almost every day. Rice is the staple food of many Asian countries. Growing rice in Japan is difficult, but why have the Japanese been able to produce enough rice to make it a staple food? One reason is breeding. Breeding began in the Meiji era and it became a world-class technology that Japan is proud of. This advanced technology could be used to solve the problem of hunger.

Production and Consumption



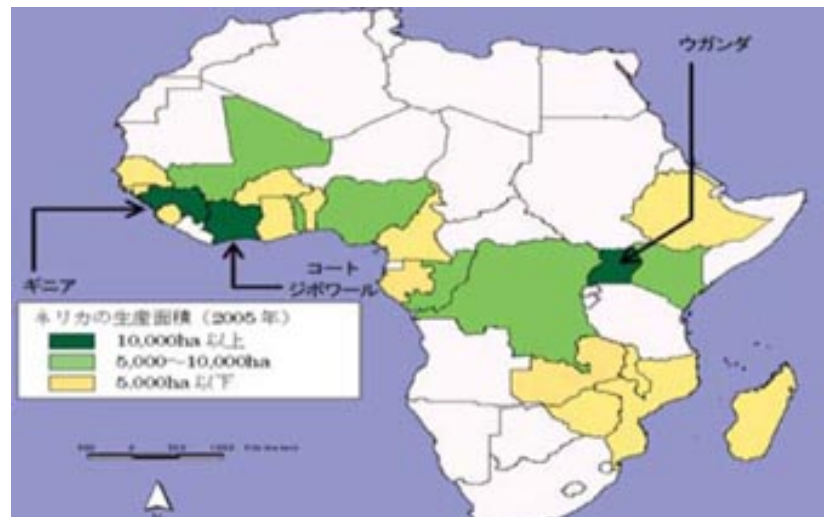
The graph on the shows the production and consumption of rice in sub-Saharan Africa. As can be seen, the demand for rice in Africa is increasing. The number of people suffering from hunger in Africa is much higher than in other parts of the world, and the situation is very

serious. There are many reasons for this: climate, civil wars, economic conditions, etc. None of these can be easily changed. But of these, I think the easiest to deal with is the climate.

Discussion and Implications

Therefore, I would like to propose NERICA rice. NERICA rice is a type of rice that grows in Africa and originated in Japan. It is high in protein and nutritional value, and I thought that if it became the basis of the African diet in the future, it would help reduce hunger. I also thought it would be a way to break away from the current dependence on imports.

NERICA rice was produced in Japan and developed to improve the food situation in Africa. It has the advantages of higher yields, higher protein content, shorter growing season, and resistance to pests and diseases than other varieties.



JICA has sent technicians to Uganda, Guinea, and Cote d'Ivoire to promote the variety. However, although the crop has been successfully cultivated, production has never been high. We wondered if this was not due to inefficient production.

Conclusion

Therefore, we propose the introduction of smart agriculture. Smart agriculture is the use of robots and ICT to reduce the burden on farmers in various situations. For example, if it were possible to predict the amount of rice needed and the quantity needed based on the weather, humidity, and temperature of the day, it would be possible to harvest the rice in the shortest amount of time and produce it more efficiently.

The only way to break out of the current situation, where we cannot rely on imports from other countries, is to produce rice. A stable harvest will lead to a stable diet. If we can produce more, we can expect more income. If we can solve the hunger problem, we should be able to solve the economic problem.

The question for the future is to think about more specific details of smart agriculture and whether it is feasible. I also need to gather information on what is similar. A future where rice saves the world is not far away.

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Realization of "Connected" Medicine

—Facilitation of Medical Care by Aggregating Personal Health Records—

ID 5217 Name Kosei Saito

Abstract

In this study, we considered what should be done to promote IT in healthcare in Japan, based on the fact that the current EMR (Electronic Medical Record) penetration rate in Japan is about 30%, which is very low even by global standards, as a prerequisite for implementing EHR (Electronic Health Record) and PHR (Personal Health Record) for the smooth development of medical services. We considered the differences between Japan and UK and Denmark, where the PHR penetration rate is almost 100%, in terms of services and national efforts from various perspectives. As a result, we felt that the reason for the lack of progress in the IT of healthcare is that Japanese people do not recognize the benefits of PHR services in the first place. Based on the above, in order to develop PHR services in Japan in the future that are highly secure and that people can use continuously with peace of mind, we appeal through this research the necessity of advertising and selling easy-to-use PHR devices that are low-priced and equipped with a minimum of functions.

1 Introduction

For the past three years, I have been conducting research with the goal of solving problems using advanced technology. Therefore, as a culmination of my research so far this year and next year, I would like to solve global medical issues using advanced technology, and I thought of this theme. In particular, since I studied teleworking technology in detail in last year's research, I would like to apply this to this year's research and conduct more in-depth research. By solving this issue, we can expect to provide more advanced, detailed, and personalized medical care, and we believe that we can achieve a higher standard of care on a global scale. In addition, the country as a whole can expect to benefit from the use of cutting-edge technology (such as stable high-speed telecommunications), which is Japan's forte, and from the provision of technology to the rest of the world. In addition, Japan has the world's highest average life expectancy and easiest access to hospitals, so this technology should be used as a weapon for spreading this technology to the rest of the world. However, it has been found that the current level of EMR (Electronic Medical Record) penetration in Japan, which is required as a condition for implementing EHR (Electronic Health Record)

and PHR (Personal Health Record) is about 30%, which is very low even by global standards. Therefore, we believe that resolution of this issue is urgently needed.

Research Question of this study is...

“Could linking patients' PHRs to their own numbers help facilitate medical care?”

As for the method of this research, at first, since there are not many explanations in books about past efforts to realize PHRs, we will research them on the Internet during the summer vacation. Then, from the end of the summer vacation to the winter vacation, we will consider those problems and areas that need to be improved, and summarize them.

Next, think of a method or mechanism that makes use of the improvements found from past efforts, and produce or propose something that you think will be useful in solving the problem yourself.

2 Discussion and implementations

According to information available on the NHK website, the tightness rate of hospital beds exceeded 60% at the peak of the fifth wave (2021/08/04 - 2021/09/29), when the rate of hospital bed use by severely ill patients was the highest to date. The tightness rate exceeded 60%. (Since no specific definition has been set by the government for the wave of infection, the Osaka Prefecture's definition was used.) In addition, as of March 2022, the tight bedding ratio nationwide was still just under 60%, and by prefecture, the ratio was over 70% in regional cities and areas with high population density. This is why, through this research, we felt the need to reduce the burden on healthcare workers. However, it is said that Japan is lagging behind in the introduction of IT in the medical field, so we thought there was room for improvement.

Based on the above, the current issues in the Japanese medical field can be summarized into the following four categories.

- i .Medical Tightness due to New Coronavirus Infections
- ii .Japan is slow to adopt IT in healthcare compared to other developed countries
- iii .I can't easily find out my medical information.
- iv .Lifestyle-related diseases are on the rise in Japan.

Next, we decided to ascertain the needs of the medical field to see what kind of support and environment they would like in this situation. A Business Labor Trends survey of healthcare professionals yielded the following results.

No. 1 “I want remuneration (allowances) commensurate with my life-saving work”

No. 2 “Elimination of labor shortage”

No. 3 “Early vaccination of medical and nursing care workers”

No. 4 “More time for break”

No. 5 “Accurate information from the government and local governments”

This study mainly aims to resolve the underlined items.

Next, we will discuss the important words in this study.

PHR (<i>Personal Health Record</i>)	EHR (<i>Electronic Health Record</i>)
<ul style="list-style-type: none">● The information is used to improve patient decision making and the quality of medical care. Information obtained and managed not only by medical institutions but also by individuals.● PHRs are used by individuals on their own initiative, and access is managed by them.	<ul style="list-style-type: none">● It's a medical information network.● Some regions share patient medical information to make connections between general hospitals and local clinics.● Also their data connect to study in the university, institute and such.
EMR (<i>Electronic Medical Records</i>)	DX (<i>Digital Transformation</i>)
<ul style="list-style-type: none">● Indicates an electronic medical record.● It is also used to run EHR services.	<ul style="list-style-type: none">● The idea of using technology to make people's lives better.● The concept was proposed by Professor Eric Stolterman of Umeå University in 2004.

As of 2021, the Japanese government has set forth an "Intensive Data Health Reform Plan" to intensively implement three actions over the next two years: "Expansion of the system to check medical information nationwide," "Establishment of the system for electronic prescriptions," and "Expansion of the system to utilize own health and medical information. The plan calls for the concentrated implementation of three actions over the next two years: the expansion of a system that can check medical information nationwide, the

establishment of a system for electronic prescriptions, and the expansion of a system that can utilize one's own healthcare information. But will these projects work well? However, reports of its activities stopped around August 2006. This project was mainly carried out in university hospitals, and a later project called "NOBORI" service is a small-scale one.

Overall, in Japan and developing countries, information sharing is limited within small areas partly because digitization has not progressed well. However, from a global perspective, in France, IC card insurance cards called "Vitale", as

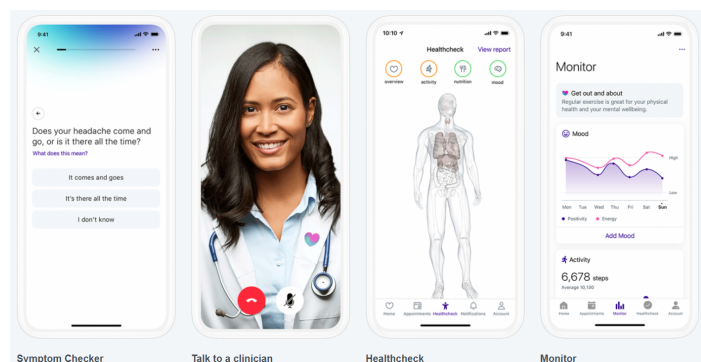
shown in the figure on the right, are distributed free of charge to citizens aged 16 or older, and various personal and medical information is registered on them. By using these cards, patients can immediately share their medical records no matter which medical institution they visit.



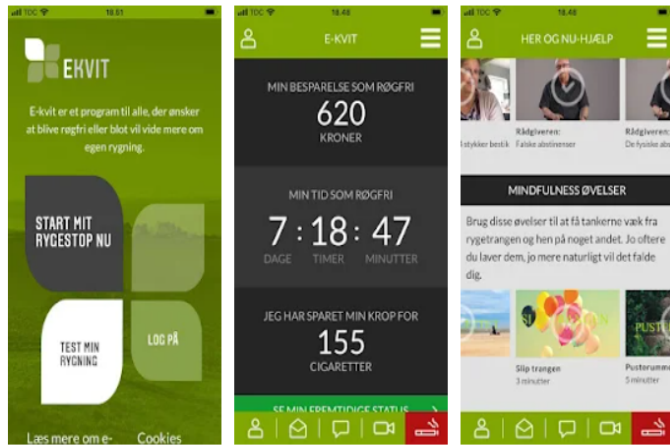
However, the EHR penetration rate is only about 1% of the entire population, which does not cover the whole country. On the other hand, there are countries where EHR and PHR penetration is almost 100%. These are the UK and Denmark. In the UK, the NHS (National Health Service) provides an API (Application Programming Interface) that can be linked with the services of many private organizations, allowing flexible service linkage. The screenshot below is an example of one such application.

The application "Babylon" allows you to visually check the condition of your body. This makes it very easy to use for many people. It is also a good way to prevent lifestyle-related diseases by understanding your body condition on a daily basis.

Denmark is a country with a population of about 6 million, but the medical satisfaction rate is high at around 90%. It can be considered that the small population made the cost of EHR dissemination relatively inexpensive and easy to introduce. In

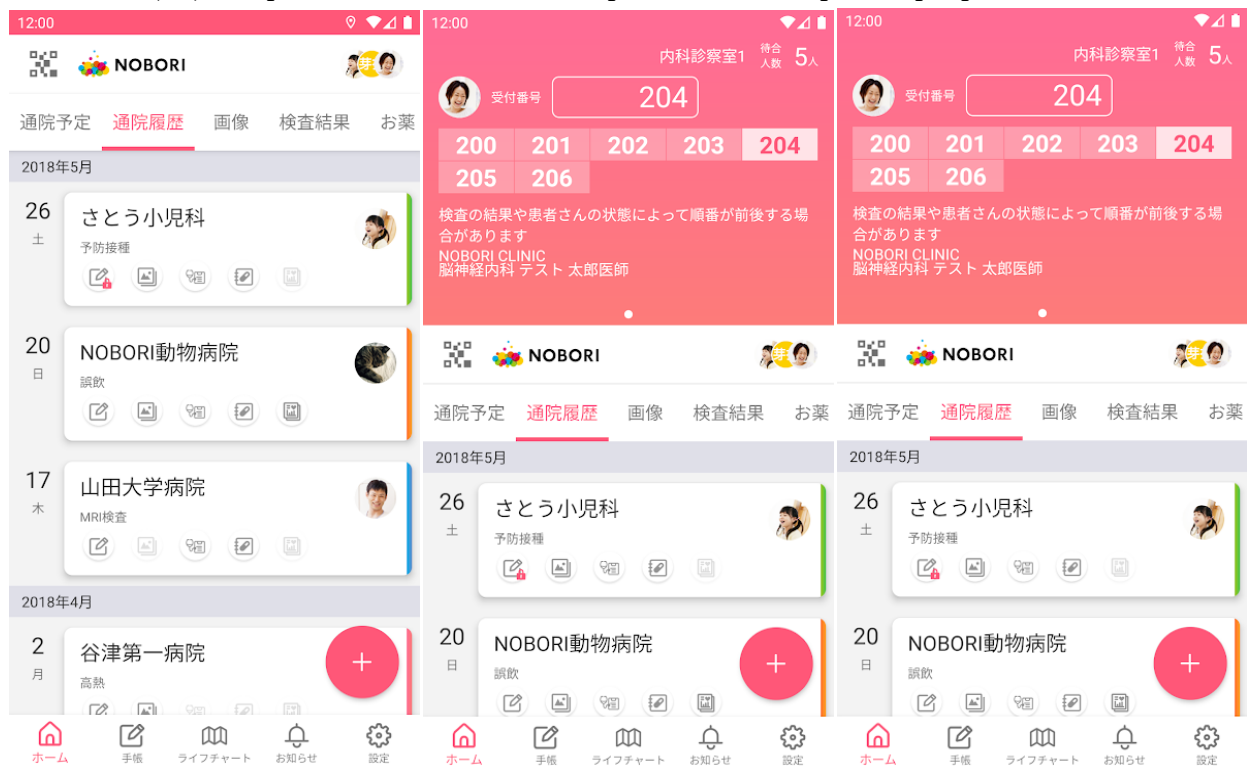


Denmark, a large number of government-related organizations are developing services that utilize PHRs and EHRs. In addition, the existence of MedCom, a team of medical IT specialists, makes it possible to provide stable medical information services. It provides a variety of government-approved information. The government has developed a wide range of services on its own, so you don't have to use services that are unofficially created by third parties and whose safety is unknown.



On the other hand, how about Japan? First of all, to briefly describe the current situation in Japan, the electronic health record penetration rate is 46.7%, and the PHR usage rate of smartphone owners is 24%. The share of iPhone and Android devices in Japan is 45.7% and 47.0% respectively, which is rare in the world, but Apple and Google, which

provide the operating systems, are developing PHR services. Apple offers a health care service called "Health care" and Google offers an application called "Google fit". The number of people who are actually using PHR is thought to be much smaller because it is possible that some people are using PHR services without their knowledge. In addition, as mentioned above, the NOBORI service, a latecomer to the Dolphin Project, is only available at a very limited number of facilities (55 hospitals nationwide as of January 2022), but the User Interface (UI) is top-level and shows the compassion of the Japanese people.



The following image is a screenshot from within the NOBORI application. As you can see, the application, which uses illustrations and images for intuitive operation, is designed for use by many people, from children to senior citizens. The main functions are: checking test results (images), recording hospital visits, making appointments, checking

waiting times, checking diagnosis results, post-payment of medical bills, daily health records, and data sharing within the family. This allows users to check their health information and diagnosis results at any time, for example, by linking the data of grandparents who live far away from home.

Based on the above, we will consider the Data Health Intensive Reform Plan again. This plan plans to provide PHR services using Mynaportal, but the timing has not yet been determined and the plan is still in the study stage, so it is necessary to create a plan as soon as possible. In addition, the electronic medical record (EMR) penetration rate should be 100% as a prerequisite for the development of this service, but it is currently less than 50%, so there is still a long way to go. Furthermore, as with the Dolphin Project, this plan is not well known by the general public. Unless these improvements are also made, it will be difficult to gain the understanding of the private sector, raise funds, and secure sponsors. I feel that the government should consider using influencers and tie-ups with well-known companies.

In light of the above, I have thought about what should be done to solve the issues related to PHRs in Japan. I believe that the government will be more likely to act if the public is more interested in the issue. The reasons for the lack of interest in these reforms are as follows.

- Because they don't know the benefits of widespread PHR use in the first place.
- Because only a very limited number of people, the medical profession, have a real sense of what's going on in healthcare.
- Because some people are afraid or anxious about handling highly personal information on the network.

In order to eliminate these three reasons, I believe that we should promote the benefits of introducing PHRs and the safety of Japan's information and communications technology. To begin with, we use the Internet for payment services and various procedures on a daily basis, and it is thought that safety is guaranteed to some extent.

Then, the benefits were reorganized to disseminate the advantages of implementing PHR services.

✓Patient side

- Check your own health status anytime, anywhere
- Online, contactless access to medication prescriptions, hospital visits, etc
- Avoid congestion and make the most of your time
- Preventing lifestyle-related diseases by understanding each person's health status
- Manage and view your body data throughout your life

✓Government and healthcare organizations side

- Real-time understanding of the public's needs for healthcare and the system
- Long-term reduction in personnel costs through mechanization of window operations, etc.

Are there any disadvantages in addition to the above advantages? One of the possible disadvantages is the risk of information leakage. In the conventional management method, each medical institution owns its own paper medical records, and the risk of information leakage due to external attacks is considered to be low. This is a safety feature that can be provided because the Internet is not used. However, taken as a whole, they are susceptible to damage from natural disasters and fire, and the risk of information loss is considered to be relatively high. In addition, depending on the number of years a hospital has been in operation, the number of documents may become too large, making it difficult to manage and preventing the smooth provision of medical services.

On the other hand, the medical service using PHR that we want to disseminate in this research can also protect data from natural disasters by using distributed storage and mirroring. In addition, since only a minimum number of documents are required for each hospital, there is no need to worry about overflowing with patients' medical records and documents, and it enables speedy medical procedures using the cloud. In addition, as a countermeasure against computer theft in large hospitals, the use of thin client terminals (where data is stored in the cloud and does not exist on the terminal) is thought to reduce the risk of information leaks. In addition, we believe that we will be able to feel the convenience of DX in our daily lives through the linkage with DX, which has been implemented in local cities and various other places in recent years.

3 Conclusion

Therefore, I thought of solutions to solve medical problems these days. In general, Generally speaking, global infectious diseases and disasters are said to be the catalyst for rapid technological innovation and innovation. It is in times of distress that people come up with ideas and overcome crises.

I . Government relations spot commercials promote the benefits of PHRs.

➡Public awareness will be raised and more interest will be generated by promoting the benefits on television and other places where many people can see the benefits. Currently, broadcasts are being made on vaccination against new coronavirus infection.

II . Release of the official government PHR app with a focus on UI.

➡ We will make applications and services that are easy to use for more people by designing them with an emphasis on ease of use. Also, as was the case with the contact infection confirmation application COCOA, we think it is necessary to be careful and make it something that can be used by a wide range of users, because if it receives a lot of negative publicity, the image of the service will deteriorate.

III. Red Cross Hospitals around the country will adopt the system on a trial basis and make it available to a large number of people.

➡ Red Cross Hospitals are widely established in both urban and rural areas, which is a good opportunity to make people of many generations and living in different unique environments evenly aware of the quality of their services. In addition, since many departments are established, it is easy to learn about various needs and to expand necessary functions.

IV. Promoting PHRs in commercials for smartwatches and other health care devices.

➡ Introducing the benefits of PHRs along with devices that can actually be used in conjunction with PHR services will increase the willingness to purchase them, which will help revitalize the market. In the past, PHR devices have been advertised along with insurance products, etc. However, I feel that we should advertise devices that can be purchased without complicated procedures such as contracts, etc. to make it easier for more people to use them.

V. Combine links to what the government, public agencies, companies, etc. are doing to advance PHRs and medical information on a single website.

➡ This item is something I can do and will continue to consider and realize. At this point, the construction of the web page has been completed and I am working on identifying reliable information.

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Campaign Resellers

~ Thinking about reselling from an economic point of view ~

5218 Narumi Saito

Abstract

"Reselling is evil". This is a common understanding worldwide. Why does resale occur in the markets? In a normal market, the price is determined and balanced at the equilibrium point where the demand curve and the supply curve intersect. However, when demand greatly exceeds supply, resale occurs because there are people who buy even if the price is higher than the list one. In order to make a profit by such unfair means, resellers are envied and hated by people and are called "evil". However I think there might be a way to resell it. Therefore, I decided to think about resale from an economic point of view. As a hypothesis, I thought that if we deliberately put resellers in places where the market is not very active and lower the supply curve, the scarcity value will inevitably increase and the economy will turn around. As a result, it was found that it cannot be said unconditionally that there is no use for resale. I couldn't find a market that was actually producing results, but I thought there was a market where reselling would be useful in theory.

1 Introduction

The global spread of the new coronavirus has created a common problem around the world. It is buying up masks and reselling masks at high prices. This is because a false rumor about a shortage of masks spread through social media such as Twitter, Mercari which is free market appreciation and so on, and people who believed it brought up masks. However, along with this action, there was also a high-priced resale of buying up masks on purpose and selling them to people who really needed them for more than double the price they bought. This made the hoarding even more serious, and people who needed masks could only get them from resale. In recent years, there have been an increasing number of cases where a certain specific item is resold at a high price. I was curious aTherefore, this time, in order to reduce the damage caused by reselling, I decided to proceed with research based on the research question, "What is the relationship between reselling and the economy?" As a research method, first, we investigate the cases where resale is likely to occur and the factors behind it using the Internet. Next, we examine the solutions and their effects in case examples, and list the advantages and disadvantages. We then use a demand-supply curve to illustrate the case

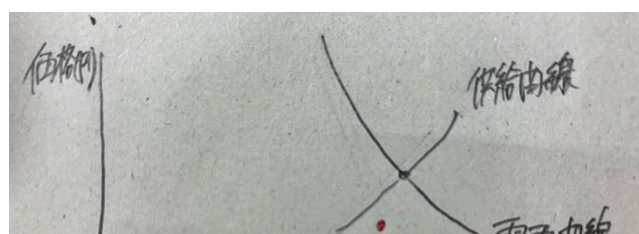
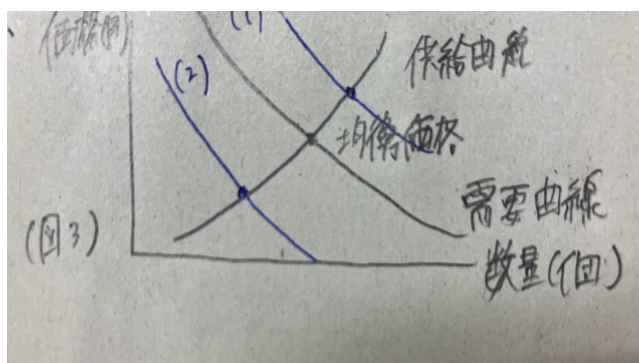
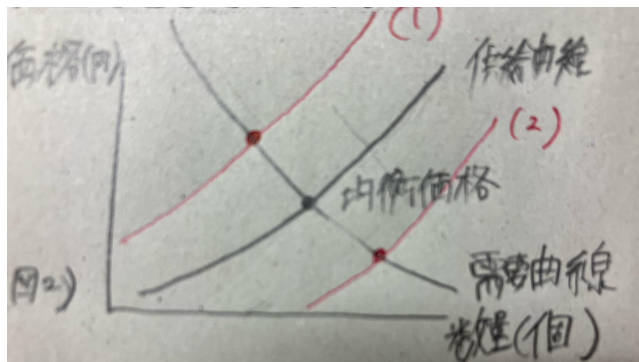
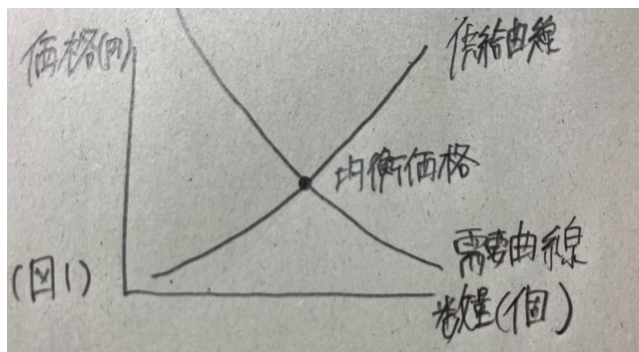
where resale occurs, and consider why the solution did not work. From these data, we devise the most efficient solutions to eliminate reselling. Also, it would be good if we could consider whether the act of reselling is really evil from the perspective of economics.

2 Discussion and Implications

First, as shown in Figure 1, in a normal market, the demand curve and the supply curve intersect at a certain equilibrium point, and the equilibrium price is set. Many things follow this demand-supply curve, but the demand-supply curve differs from this for perishables and furniture, for which the amount of supply and demand varies depending on the season. I would like to explain how the supply and demand curves for perishables and furniture are drawn here. First, let us talk about

perishables. Due to crop failures, disasters or wars, and increases in raw material prices or wages, the supply curve shifts as shown in Figure 2 (1). As a result, the equilibrium price also shifts upwards, making the price higher. On the other hand, the supply curve shifts as shown in Figure 2 (2) due to a good harvest, technological innovation, and lower raw material prices and wages. As a result, the equilibrium price also shifts downward, making the price cheaper.

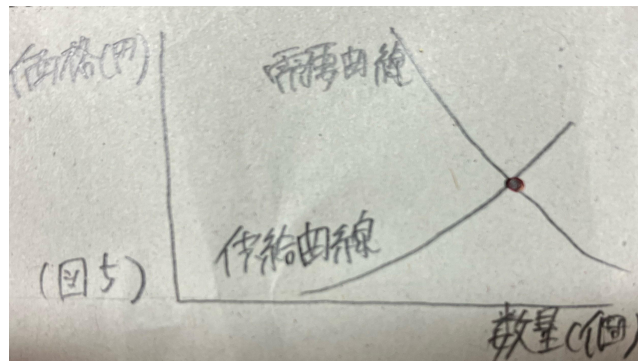
Next is furniture. The demand curve shifts to (1) in Figure 3 due to rising incomes and rising popularity. As a result, the equilibrium price also shifts upwards, making the price higher. On the other hand, the demand curve shifts to (2) in Figure 3 due to falling incomes and falling popularity. As a result, the equilibrium price also shifts downward, making the price cheaper. What we have discussed so far is the case in which the market



naturally stabilizes without being affected by external influences.

However, when the market is not stable, for example when demand is too high for supply, it is subject to external influences. That is "reselling". Here, we will discuss resale by taking ticket sales as an example. Ticket sales have been in limited supply since the beginning, but demand is limitless. Figure 4 shows the diagram. As the demand is higher than the supply, the price is naturally higher. However ticket sales are priced as well as supplied from the start. Therefore, the price appears outside the demand curve, as shown by the red dots in Figure 4. Hence, I thought that it would not be naturally stable and would allow intervention from the outside.

There is another reason for allowing outside intervention. That means that there are people who buy tickets from resellers



no matter how expensive they are. Since resellers are already reducing the supply, the demand is even higher and the number of people who can't get it increases. Therefore, there are a certain number of people who buy from resellers, and they buy even at unreasonable prices. However I think that this unfair price is the price that should be set. Based on supply and demand, resellers set prices that consumers can barely afford, and consumers understand that, so they will buy no matter how high the prices are, according to my analysis. I thought that the above two points, "The fixed price is not naturally stable" and "The situation where consumers understand the equilibrium price" are the causes of resale.

Next, I thought about how to use resale. Resale has been intervening and influencing an unstable market. What if we deliberately let resellers intervene in an already stable market? In other words, they are trying to forcibly reduce the amount of supply and add valuable value to the product. Doing so will result in Figure 5, where you can get a higher profit than Figure 1, which is usually stable. From an economic point of view, it can be said that the economy is driven by resale. However, it will be difficult for the reseller to make a profit, so it will be difficult to realize.

3 Conclusion

From this paper, I came to the conclusion that there is a possibility that the economy recognizes resale as an advantage in response to the research question "What is the relationship between resale and the economy?" Also, I thought that the most effective

solution to eradicate reselling is to crush the cause of reselling, clear purpose and easy. Regarding the first cause, pricing, there is a problem with management that does not consider the equilibrium price. Therefore, it may be necessary to set the price in line with the equilibrium price from the beginning, and then set the price again if the demand-supply curve deviates. By doing so, resellers will not be able to buy up a large amount, and since the pricing is appropriate, it will be difficult for resellers to make a profit. Next, let us consider the second cause, the consumer. Why do consumers buy products from resellers? This may be partly due to the lack of networks. The fact that people do not have access to networks mean that consumers do not trust each other much because they are interacting on social media. However, resellers who only aim to make a profit have some track records, so it is easy for consumers to use. We will introduce a tool that will surely get the product here. The tool is to connect consumers with people who for some reason can no longer obtain or need to obtain products. This is an application of existing tool ticket trading. Ticket trading still has many disadvantages, but if we can overcome the disadvantages and use it in fields other than tickets, we think there will be no curtain for resellers. Finally, I wonder if resale is bad, but I do not think it's all the responsibility of the reseller, even though it is bad. I thought that resale happens because of the management side and the consumer. Therefore, it is necessary for the management side to take measures to prevent reselling, and for consumers to make efforts not to buy from resellers, to reduce the existence of reselling.

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World Revolution of Library

~Build a city whose core is local library~

5219 Mio Sasaoka

Abstract

With the research question “What can libraries do to promote the revitalization of the local community”, I got some information from the Internet and literature to develop my study through interaction in school. Out of what northern libraries are, I think there are two things that libraries can do, “to play a role which connects local people and facilities which have a cooperation with a library” and “actively disseminate information about the local community”. We will create a network of whole regions centered on the library in order to expand the range of activities. In addition, if the information disseminated by the library increases opportunities for residents to think about the "local community" of the area itself, it will be the first step in community formation, and the future direction will be decided. In this research, I need to think how libraries should cooperate with local people and how to transmit information more specifically.

1 Introduction

“The Decline of Local Communities”—this is a word that we often hear in the news these days. In urban areas, it is difficult to form relationships with local people because of the rapid turnover of people. Even in rural areas, declining birth rates and an aging population are progressing, and ties as a local community are fading. I wonder why "local community" is attracting attention now. There are various reasons for this, but one of them is disaster response. Furthermore, it is also cited as one of the solutions to problems such as the lonely death of the elderly and the isolation of families in the child-rearing generation.

Based on the contents above, I focused on libraries that exist all over the world. In 2018, there are about 3,360 libraries in Japan, and the number is on the rise. Many libraries are equipped with Internet access and have a wide variety of literature. If such a library is the center of community development, it may be possible to form a community more smoothly.

The research question of this study is "What can libraries do to promote the activation of local communities?" In order to answer this research question, we conduct research using the Internet, literature, overseas papers, etc., improve the quality of research through seminars and interim presentations in English, and finally present the final results at our school.

2 Discussion and implications

I summarized my own considerations, including the contents of my own previous research, "The World Library Revolution: Aiming for libraries that people want". Details are as below.

○What is a library?

Libraries are mainly classified into six categories according to the type of user: national libraries, university libraries, public libraries, school libraries, specialized libraries, and libraries installed in other facilities. In addition, public libraries are divided into public libraries and private libraries (details are described later). The subject of my research in this study was the public library.

In Japan's "Library Law", a library is defined as "a facility that collects, organizes, and preserves books, records, and other necessary materials for use by the general public, and contributes to education, research, recreation, etc. , local governments, the Japanese Red Cross Society, general incorporated associations, or general incorporated foundations (excluding libraries or library rooms attached to schools)." A library established by the Japanese Red Cross Society is called a public library. Likewise a library established by the Japanese Red Cross Society, a general incorporated association, or a general incorporated foundation is referred to as a private library." (This library law applies only to public libraries.) In addition, there are some differences depending on the country. For example, in Finland's "Public Library Law (Laki yleisistä kirjastoista)", "Public library means a municipal library facility for all residents of a municipality." defined.

○Northern Libraries



In the "Systematic Public Library of the Year Award" sponsored by the International Federation of Library Associations (IFLA) every year, "Aarhus Public Library Library Dook 1" in 2016, Holland's "School 7" in 2018, Finland's "Helsinki Central Library Oodi" in 2019, and Norway's "Daitman Björbika" in 2021 were chosen. We can find that many of the libraries that were selected were from Northern Europe. While researching the libraries in Northern Europe to find out why, I found some different points from Japan in terms of the role and position of libraries in Northern Europe, and what was emphasized. I



found some differences. In Scandinavia, public libraries were closely tied to the region, and the library was the base of people's cultural activities. For example, I felt that many relatively large libraries have a maker space with 3D printers and various tools, a music studio with full-fledged equipment, and a stage where events can be held. I also felt that each library has its own commitment to equipment such as chairs and bookshelves in the library. The photo on the right shows, from the top, the overall view of the Finnish public library "Oodi", the music studio, and the third floor of the building. The facilities are substantial, and the people who spend time

there seem to be using this space in their own way. Compared to Japanese libraries, first of all, you can see that the scale is different. Also, contrary to the Japanese image of a library as a "quiet place," the fact that people can chat normally seems to be buying an aspect of it as a place for interaction among residents.

We can say that the origins of libraries and the climate around Northern Europe have a lot to do with why libraries in Northern Europe are developing. Northern Europe is cold, and it is said that there has been a custom of knitting and reading without going outside in the winter. Because of that influence, reading is still rooted in people in Northern Europe.

○Community Centers

While researching community center libraries, I found a document stating that while the number of libraries in Japan is increasing, the number of community centers is decreasing. The number of public halls is still about 10,000, but in the last 20 years or so, the number of libraries has increased by about 1,000, while the number of public halls has decreased by about 5,000. In a situation where public halls, which serve as places for interaction among local residents, are decreasing, we can suggest that the role of the public hall could be supplemented if we apply how libraries in Northern Europe function as places for cultural exchange to Japanese libraries.

[table]Changes in the number of public halls and libraries in Japan (based on the Ministry of Education, Culture, Sports, Science and Technology's "Social Education Statistics")

	1999	2018
libraries	2,592	3,360
community centers	19,063	14,281

○Necessity of Local Community

Introductions have been preaching that the local community is necessary because of this. However, at an interim presentation at the school, I received the opinion that "people who do not think that the local community is necessary are meaningless in the first place." Certainly, if everyone knew they needed a local community, it wouldn't have declined as it does now. In fact, there are some people who do not want to get involved in local children's associations because of some kind of trouble in the community. Even in the area where I live, there are conflicting opinions between the north and the south, and now there is no interaction like in the past. Forming communities can make life both rich and dangerous. It can be said that the local community of the future needs to be able to maintain an appropriate distance between residents. In addition, it will be necessary in this research to publicize the necessity of such a community.

3 Conclusion

The research question of this thesis - First, it should cooperate with local facilities and play the role of a bridge that connects local residents. This is necessary if we want to make the most of the existing library and expand the range of activities. We need to create a network for the entire region centered on the library. Libraries will also be able to proactively disseminate information about the "local community." By disseminating information from the library, if the residents have more opportunities to think about the "local community" of the area itself, it will be the first step in community formation, and I believe that the future direction will be decided.

The problem of this study is that we have not been able to determine the details. Also, we are still only thinking about the "Japan" part of "From Japan to the World." When thinking about the "world" from now on, for example, what a library can do in a given region

varies greatly depending on the world's literacy rate, the state of the library's installation, the living environment, and so on. At that time, it will be necessary to obtain several times more materials than we have now. To think in more detail about how to collaborate with institutions and how to disseminate information, and to obtain materials for thinking on a global scale—this is the subject of this research.

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The Comprehensive Gender Framework

—To protect new connection as an alternative to marriage—

5220 Sato Yutaro

Abstract

In this paper, same-gender marriage is discussed mainly. In order to solve this problem, we have come to the conclusion that “the comprehensive gender framework” is an effective solution. This means that not to recognize marriage for same-gender people, but to protect new connections between them. It can be presumed that it will enable many countries to adapt same-sex marriage which they cannot adapt due to the public opinion or religious reasons.

1.Introduction

The concern about same-gender marriage or partnership systems in the world has risen. Currently, only about 20% of countries and regions in the world have systems that guarantee the rights of same-gender couples, such as same-gender marriage and registered partnerships. In other words, more than 80% of countries, including Japan, do not recognize them. Not only that, in 88 countries it is supposed to legal restrictions or penalties, with the death penalty in the most serious cases. Therefore, this study was conducted in order to deepen this issue.

Then, "What is needed to create and protect a new connected relationship as an alternative to marriage?" was set as the research question. This research was mainly based on a survey of previous studies on marriage or family systems, and gender issues on the internet, such as CiNii.

2.Discussion and implications

In this age of emphasis on respect for diversity, there are several possible reasons why only about 20% of countries recognize same-sex marriage.

The first is religious reasons. This is especially true in Middle Eastern and African countries, in other word, in the Islamic world. This is because the classical interpretation of Islam does not recognize same-sex marriage. Even in countries where same-sex marriage has been legalized, such as the U.S, there is wide range of positions, from condemnation of those to positive acceptance of it because some passages in the Old Testament seems to deny it.

The second is public opinion: according to a poll conducted by NHK, 57% of respondents were in favor of same-sex marriage, while 37% of them were opposed. The most common reasons for opposition are that it will lead to fewer children and lower fertility rates, and that marriage should be between man and woman, then by the belief that it will destroy the traditional family structure.

The "comprehensive gender framework" is defined as a system that widely protects same-gender marriage, which extends the traditional institution of marriage for heterosexuals to homosexuals, as well as the institution of partnerships. In discussing this issue, we will consider same-sex marriage and the partnership system.

As the name suggests, same-sex marriage is the recognition of the right to marry between persons of the same gender, which was previously recognized only between persons of the opposite gender. States often recognize this right by 1:amending laws governing marriage or 2:by enacting new laws that recognize same-gender marriages. The United States and Taiwan use the latter (2) approach. Conversely, those marriages are very difficult to introduce because it necessarily involves the amendment and enforcement of laws and regulations, especially important laws such as the Constitution and the Marriage Act (Civil Law), and public opinion is likely to be divided into terms of changing conventional values.

The partnership system is a system that grants same-sex couples rights equivalent to marriage or part of marriage. Norway and Sweden have introduced this system on a national basis, while some local governments in Japan have introduced it. Since this system is separated from marriage between a man and a woman, the barriers to its introduction are said to be lower than those for same-gender marriage, which may require amendments to the Constitution and the Civil Code (Marriage Law). However, if it is introduced only at the local government level, as in Japan, the rights are quite limited. This is because marriage is a legal act, which entails various legal rights and obligations such as the right to support and inheritance. On the other hand, the partnership system is a system determined by the guidelines of the local government. Therefore, effects are limited, for example, in terms of public housing and hospital visitation.

Then, I introduce a foundational, inclusive gender framework. These days, each state has its own protection system. As mentioned in the introduction, there are countries that "persecute" rather than protect. Therefore, we propose a foundational framework that forms

the basis of each country's own generous protection policy, as shown in the figure(1).



One of the merits to introducing this system is its flexibility, that is to say, countries can select types of protection, like [1][2][3] in the figure, depending on their own culture, relief, or religion while protecting at least as a minimum.

3.Conclusion

In conclusion, I propose the introduction of "The Comprehensive Gender Framework" as a solution to one of the problems related to marriage. Further study and research is needed to introduce this framework.

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Baseball in Europe

~Baseball 5 makes it easy for children to take on the game of baseball~

5221 Soichiro Shimada

Abstract

In order to spread baseball around the world, it is first necessary to have people recognize and experience it as an easier and safer game. For this purpose, Baseball 5 and Cap baseball are recommended. Since this game can be played in a small space, street fights are also possible. Therefore, we conducted research mainly in Europe, where street fights such as basketball and soccer are easily conducted. As a result, we believe that cricket, which is said to be the origin of baseball, will be widely spread in Europe.

1 Introduction

The reason for setting the theme was that the number of baseball players in the world is currently decreasing, and we wanted to increase the number of players mainly in Europe, where the number of players is relatively small. Last year, when I researched the decrease in the number of baseball players in Japan, I found a declining trend, so I will conduct research on this theme. The goal of this research is to make it easier for people to play baseball regardless of gender. The sport of baseball cannot be played by both men and women except for high school students and older, and in hardball games, men and women are not allowed to play separately. We will conduct research to improve this situation.

2 Discussion and implications

First, we learned that baseball originated in Europe. Therefore, baseball tournaments are also held in Europe. However, it is not something that can be played at any time in daily life like soccer. That is largely due to the problem of whether or not street fights can be held. In contrast to soccer and basketball, baseball is a large-scale game and cannot be said to be easily played. However, there is currently a proposal by the World baseball softball federation called "Baseball 5". It is like a five-player baseball game, but it does not require a bat and gloves and can be played by both men and women. The court area can be 21m x 21m, making

it easier to play than conventional baseball. Since there is no rule that men and women must be separated in this game, this is one of the ways to achieve the goal of this research.

Next, we investigated cap baseball, a simple indoor baseball game played in some parts of Japan. In cap baseball, all that is used are plastic bottle caps and a special bat. Cap baseball can also be played 5 vs. 5. It can also be played in a smaller area and can be enjoyed by both men and women. Currently, the game is only played in a small part of Japan, so it is not well known and has a small population. The disadvantage of this game is that it requires a special bat. It is important to consider whether it is possible to replace the bat with a broom, plastic bottle, or other everyday items.

A manager or coach is essential in a nine-man baseball team. Some people looking at the baseball world from the outside may have the idea that managers and coaches are scary, must shave their heads, etc. In order for children to enjoy playing baseball in a relaxed and fun environment, it is important to allow them to play baseball on their own. "Baseball 5" is a better choice than 9-man baseball because it is not dangerous, and we recommend it as an opportunity for children to start playing baseball.

There are two ways to spread the concept: First, Baseball 5 is recommended by the Wbsc, so it should be done gradually as an experience at tournaments held in various countries around the world. If this can be done, it should gradually spread. The second way is for the national baseball team of the country to spread the idea. This would be the easiest way, since there is a national baseball team in Europe.

Next, we will consider how women can be involved in the game as a profession. In Japan, there is currently a women's professional baseball team. However, it is not well known and international tournaments are held infrequently. Therefore, we would like to get involved as a person who goes overseas to introduce cap baseball and baseball5 to people in other countries. We also believe that there should be an option to get involved with current professional baseball teams as strategists and trainers. First of all, we should dispel the fact that baseball is a men's sport, and then increase opportunities to get involved in this way.

3 Conclusion

We recommend Baseball5 to encourage people around the world to play baseball. By doing so, the number of baseball players will increase. The obstacles in this process are who will promote the game to the world and how to get people to switch to baseball.

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2022/4/30

Diffusion of Organic Cosmetics

~ Make Organic Cosmetics More Familiar with Subscription ~

5222 Sakira Suzuki

Abstract

Cosmetics are mainly made of petroleum-based and chemical ingredients. As a result, it leads to environmental problems such as global warming and affecting people. Organic cosmetics do not use petroleum-based ingredients, so they have a positive impact not only on the earth but also on people. However, there is currently no official uniform standard for organic cosmetics in Japan and the world. As a result, there are many organic cosmetics based on their own standards, causing confusion among consumers. Therefore, I propose to create a store-type organic cosmetics subscription. Based on issues such as "COSMOS", which is a unified standard in Europe, and consumer opinions, we aim to offer a subscription that is safe and easy for consumers to understand and environmentally friendly.

1 Introduction

The purpose of this research is to popularize organic cosmetics as a step toward a non-petroleum society. General cosmetics contain many petroleum-based ingredients and chemical ingredients, and in recent years, they have had an impact on people and the environment. For example, cosmetics have caused health problems such as rashes, eczema, and vitiligo. There are also environmental problems such as the impact of plastic containers which could affect micro plastic, and deforestation for raw materials for cosmetics. In the domestic market for natural and organic cosmetics, there is a growing awareness of safety and security regarding cosmetics, an increase in consumers who think that they should live in a sustainable environment, and an increase in the number of women who are aware that they have sensitive skin. There is a lot of interest in the background. On the other hand, a unified standard for organic cosmetics and natural cosmetics has not been established in Japan and the world at present, and certification standards vary considerably depending on each certification body. As a result, there is confusion among consumers, such as not knowing the difference between the certification marks or not knowing which certification mark to trust. From the above, I thought that the popularization of organic cosmetics would be beneficial for people and the environment.

2 Discussion and implications

○ Types of oil-free cosmetics

There are various types of oil-free cosmetics, such as natural cosmetics, organic cosmetics, natural cosmetics, and vegan cosmetics. First of all, natural cosmetics is a general term for cosmetics that use naturally derived or naturally-derived raw materials and minimize the use of chemically synthesized raw materials or do not use them at all. Organic cosmetics refer to either cosmetics that have obtained organic certification or cosmetics made using organic materials that do not place a burden on the environment," among natural cosmetics.

Cosmetics made according to this definition can be called "natural cosmetics" or "organic cosmetics" but there is no official standard in Japan so far. Natural cosmetics and organic cosmetics are not just about using raw materials derived from nature. "Organic cosmetics" originally meant "a farming method that does not place a burden on the environment" and these cosmetics are required to be environmentally friendly products that make good use of nature. In other words, it is necessary to consider the environment not only in raw materials, but also in the production of raw materials, the manufacturing method of products, and sales. For these reasons, the subject of this research was set as "organic cosmetics." Among them, skincare cosmetics/basic cosmetics (skin lotions, milky lotions, hair shampoos, etc.) were targeted.

○ Comparison of Organic cosmetics and general cosmetics

I explain the difference between organic cosmetics and general cosmetics. First of all, the concept of general cosmetics is to pinpoint ingredients according to the desired effect, such as "moisturizing" and "prevention of acne", so we take the approach of "dealing with problems that have occurred." On the other hand, organic cosmetics take the approach of "preventing trouble from occurring" by taking advantage of the natural health of the skin through complex ingredients contained in naturally derived ingredients. The merits of organic cosmetics include the fact that they are mild, the natural healing power can be enhanced by using them, and the earth and animals are taken into consideration. Disadvantages include low immediate effect, high cost compared to general cosmetics, and short expiry date. The advantage of general cosmetics is that they are distributed in an environment where it is easy to obtain and the price is reasonable. General cosmetics can be purchased at drugstores and recently convenience stores. In addition, recently, many cheap plastic cosmetics brands are also distributed. The downside is that it can pose a health hazard. Main cosmetic raw materials include oil-based raw materials such as petroleum and waxes, surfactants, moisturizing agents, preservatives, ultraviolet absorbers, antioxidants, coloring materials, and

fragrances. Special additives such as vitamins, amino acids, hormones, and natural extracts are also available. By using petroleum-based ingredients, it is possible to make products at a low cost, so the cost performance is high, and it is possible to provide intensive care for skin problems with symptomatic therapy, and to give immediate effects. On the other hand, the number of people who are allergic to petroleum-based ingredients and chemical ingredients is increasing, and damage such as vitiligo caused by penetrating cosmetics is occurring. It is said that there are more than 8,000 active ingredients in cosmetics made from petroleum, and it is difficult to grasp all of them and to know and inform them of the dangers. In addition, skin troubles that occur with age may be caused not only by aging but also by the accumulation of petroleum-based ingredients.

○ Current situation

In Japan, we are developing and selling non-petroleum cosmetics such as Shinary Cosmetics, Arte, and KOTOSHINA. An organization called the Japan Organic Cosmetics Association is working to spread organic cosmetics. Currently, there is no unified standard for organic cosmetics in Japan. In addition, many certification marks are distributed in Japan. Also, since these marks are not public, there are no penalties. In this situation, even if only 1% of the cosmetics are organic, and the remaining 99% are petroleum-based or chemical-based, they can still be called organic cosmetics. That is why “fake cosmetics” exist.



As a result, consumers are confused, such as "I don't know the difference" or "I don't know which mark to believe".

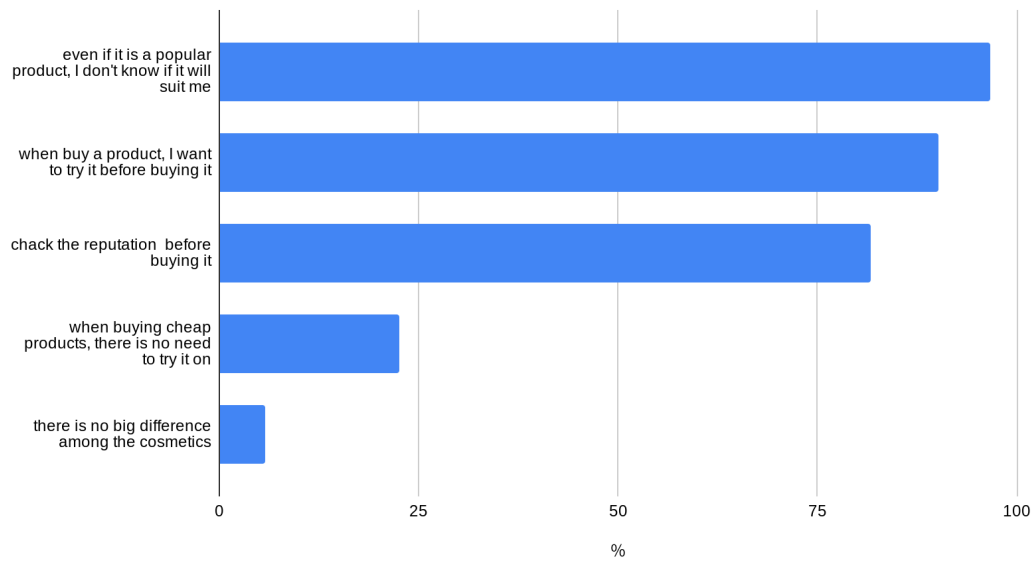
○ Current situation of the world

There are organic certifications such as “COSMOS” and “NATRUE” in the world, but the standards vary. As the organic cosmetics market expanded and products with various certification standards circulated in the market, confusion and perplexity increased among consumers, such as "Which organic certification is safe?" and "Which standard is correct?" . Since around 2000, there has been a movement to establish a unified European standard. International agreed to establish an Over the next eight years, each standard was compiled, and in 2010, the international standard "COSMOS Certification" was born. After that, the standard for one association ended in 2016. From January 2017, certification will be performed according to the certification standards established by "COSMOS Certification". Since 2007, the COSMOS mark has been added to the existing five marks. However, products certified before 2017 will not bear the COSMOS mark. If you want to update the current product to a product with the COSMOS mark or sell the product, you will need to adjust the ingredients according to the COSMOS certification standards, and you will need to obtain new certification. In other words, not all marks have the COSMOS mark. Therefore, it is difficult for consumers who do not know the history to distinguish and understand.

3 Conclusion

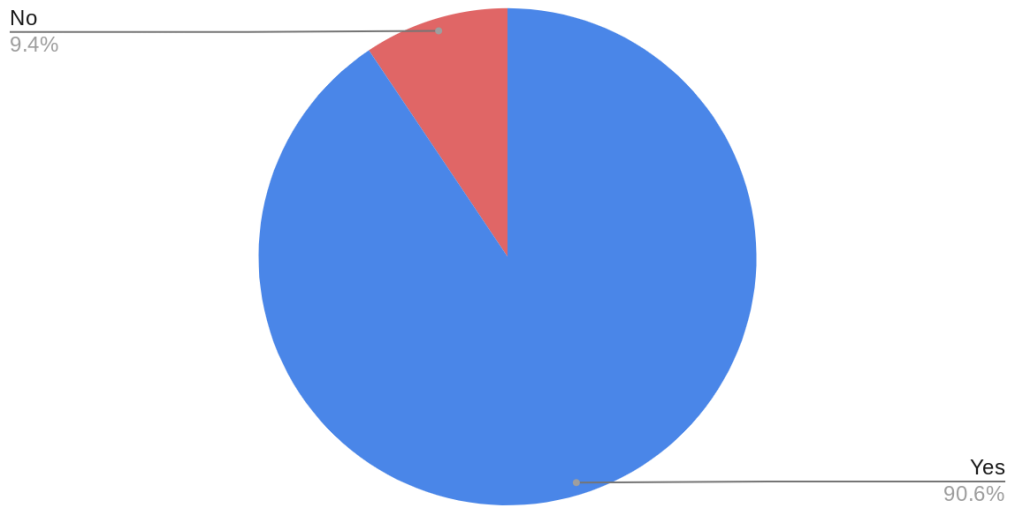
I propose subscription as a way to popularize organic cosmetics. By making it a flat-rate system, you will be able to easily try various organic cosmetics. According to a survey conducted by “@cosme”, many people said, "Even if a product is popular, I don't know if it will suit me." In addition, it was found that many people hesitated to purchase skincare and basic cosmetics because they could not try them on testers or samples in advance. Therefore, we propose this store-type subscription. By making it a store type, you can try cosmetics before purchasing, and ask the staff what you don't understand or worry about. We also thought that if we had customers bring their own containers, there would be no need to package them one by one, which would lead to resource conservation. We thought that handling only products with uniform standards would lead to public awareness of the certification standards. Organic cosmetics do not use preservatives and have a short expiration date, so there are still issues in terms of storage and management methods and costs at stores. For the cost problem, I'm thinking of collaborating with a high brand.

way of thinking and action about cosmetics and beauty



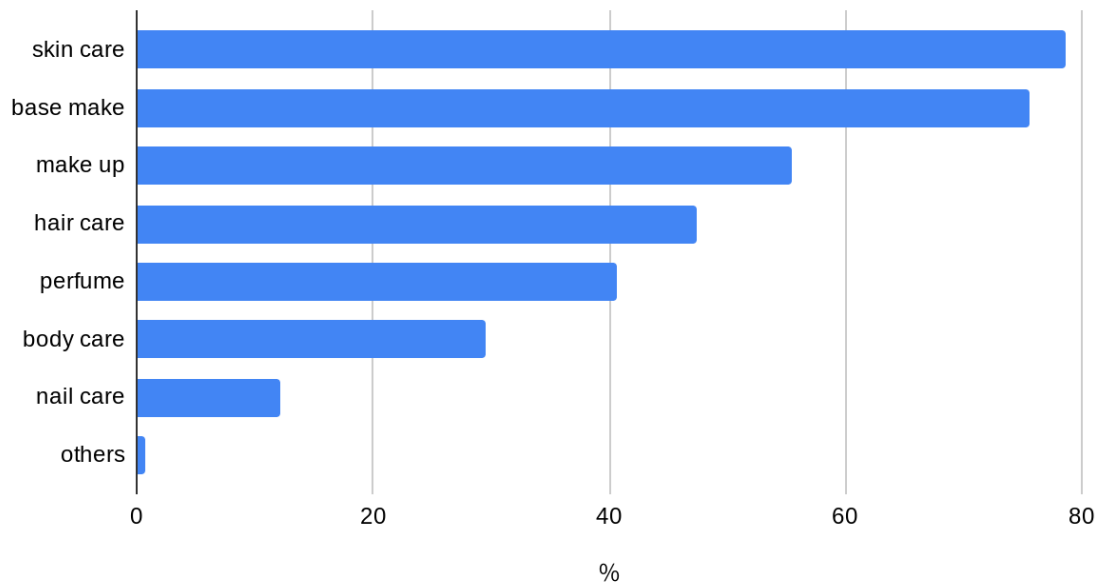
@cosme

Have you ever hesitated buying products because of not trying a tester?



@cosme

items



@cosme

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90% of people want to try samples and testers before purchasing cosmetics. Answer: Is the Trial Town at Nijishima the key to purchasing products in primary distribution? Results of "Survey on Cosmetics Purchases in Secondary Distribution at @cosme" istyle istyle Co., Ltd.
<https://www.istyle.co.jp/news/info/2021/10/1014.html#:~:text=%E4%BA%8C%E6%AC%A1%E6%B5%81%E9%80%9A%E3%81%A7%E5%8C%96%E7%B2%A7%E5%93%81,%E3%81%8C%E6%8C%99%E3%81%92%E3%82%89%E3%82%8C%E3%81%BE%E3%81%97%E3%81%9F%E3%80%82>(2022/01/18)

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The work-style reform of rookie animators

-For the new system that exceeds the age of Osamu Tezuka-

5223 Kana Takahashi

Abstract

What can be done to help eliminate the low wages for rookie animators? Most Japanese animators are working on a piece-rate system as freelancers, and few of them are given a fixed salary as regular employees. Rookie animators with lower skills finish fewer pieces per a day and cannot earn a proper income to make a living. In two aspects of improving skills and stabilizing salaries, expanding the scale of the "Animator Support Organization" will be effective. The activities of this organization are to provide housing support for rookie animators at the Rookie Animator Dormitory, and to hold the Rookie Animator Awards and animation workshops. If the scale of the organization can be expanded, new animators will be able to make a stable living. It is important to make animation fans aware of crowdfunding which the organization is currently doing.

1 Introduction

The animation industry is one of the most important elements of Japan's international culture. The animation industry is developing not only in Japan but also in other parts of the world, and although there are animations produced by foreign countries, Japanese animations seem to be the most popular. Although Japanese animation has been attracting worldwide attention in recent years, the problem of low wages for animators has been an issue for a long time. In this study, I will consider ways to solve the problem of low wages for animators and the animation industry related to this problem.

The animation industry is currently seen in the media a lot, and one of the most interesting issues is the low wages for animators, the overworking of animators, and the shortage of human resources. In particular, the fact that rookie animators are having a hard time in life is sure to be a serious problem for the animation industry in the future. We hear a lot about the low wages for animators and some other professions in Japan compared to the world. I found that wages in the animation industry around the world are relatively similar to other professions, but in some areas, wages are just as low as in Japan. I think it is important to solve this problem for the further development of Japanese animation in the world and for people around the world who enter the animation industry because of their admiration for Japanese animation. I also think that solving the problem of low wages in the animation industry will lead the way in solving the problem of low wages in various professions around the world. For these reasons, I decided to research this topic.

As a research method, my hypothesis is to come up with a system to support rookie animators by reducing their financial and labor burdens from two perspectives. Mainly, I will look at articles and company information from previous studies on the Internet and examine the basic salary structure. As for previous research, Kazushi Yugami's "Labor in the Animation Industry" already discussed the low wage issue in 2006. This shows that even after 17 years, there has been no change in the income situation. In addition, Mr. Fumihiko Ikuta's "Policy and Institutional Design of the Contents Industry" focuses on the "Human

Resources Development Project for Young Animators," commonly known as "Anime Mirai," which is a project carried out by the Agency for Cultural Affairs.

2 Discussion and implications

According to several statistics, foreign animator's income is far higher than that of Japanese. Taking the difference between them into account, I found systems which can be adopted to Japan.

a) Salary type and income

In major Japanese companies today, there are basic salary structures: age and service pay, job-related pay, job performance pay, performance-based pay, and role-based pay. The animator's piece-rate system is "a performance-based pay" system. In some cases, in addition to base salary, employees receive benefits as they need them, including overtime, commuting, family, and housing allowances. Very few animators work as full-time employees for companies, so most do not receive benefits. In the U.S., the most common form of salary is "job-based pay". "Job-based pay" is determined by the difficulty and importance of the work an employee performs, and each job grade and job salary is determined through job analysis and job evaluation. In Western Europe, the concept of "occupational pay" is fundamental. The salary of an engineer or a cook, for example, is determined based on the type of job and the level of skill required to perform the job. The job category (position) is larger than the job salary, and the salary is determined based on the difficulty of the job and reflects the supply and demand of labor for the position. In many cases, employees are hired on the condition that they are engaged in the job, and their job type and their age rarely have an impact on their salary.

b) Present condition

In Japan, for instance, in the production of a 30-minute TV animation episode, it is considered to take more than 3 months with about 150 people. However, the estimated number of animators in Japan is 6,000, and considering that there are about 100 titles currently on the air, we can calculate that there are 60 animators per title. Next, according to the "Animation Producer Fact-Finding Survey Report 2019" (Ref. 1), annual income is 1,546,000 yen in the early 20s, 2,457,000 yen in the late 20s, and 3,652,000 yen in the early 30s. Since the national average annual income is 2,620,000 yen in the early 20s, 3,610,000 yen in the late 20s, and 4,070,000 yen in the early 30s. It is clear that the average income is lower than the average income among young people in their 20s and early 30s. In their inexperience, animators mainly work for low unit prices, and it is difficult for them to handle the volume of work, which makes it difficult for animators who work on a piece-rate basis to earn income. In order to make animations into moving pictures, the frames are divided, and the value per piece was around 200 yen.

Furthermore, the number of drawings one person could make in a month used to be considered 1,000, but nowadays, only half of that number, or 500 drawings, is sufficient, judging from the improvement in drawing techniques and the quality of today's animations. Calculating these figures, it was found that a monthly income of

79,000 yen was a better figure. The average monthly income of Japanese people is roughly 270,000 yen, so the difference is significant.

The annual salary for an animator working in the US is usually around US\$71,800 (8,130,000 yen). Salaries range from US\$38,000 (minimum) to US\$109,000 (maximum), which is at least above the average income of Japanese animators. This data indicates that animators in other countries are treated more highly than those in Japan. This is due to the different wage systems and animation production methods, as well as the fact that they are sponsored by large corporations.

c) Animation Production Method

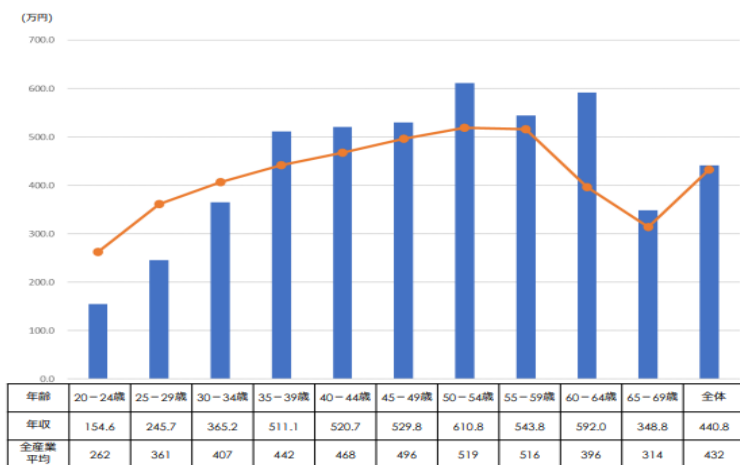
In other countries, online distribution has become the major form of anime, and production studios have established a powerful profit model that allows them to earn royalties for secondary use through collaborative production with Netflix, Amazon Prime, and other online content companies. In Japan, on the other hand, the "production committee method" of production has been used for a long time. This is a method in which funds are raised from several companies to produce a work. This method also allows for secondary use profits, but the actual revenue is small because the profits are divided among multiple companies that have invested in the production. This method has been used since the early days of animation production. The advantage is that the burden of fundraising is split out, however, in the production committee method, multiple groups invest in the project, so the profit per company is small even if the project is a success. Since the profits are split up among multiple groups, depending on the size of the budget, it may not be possible to expect a positive balance unless the hit is explosive. Animation production companies don't own copyrights, and in order to own copyrights, they must create their own original works and make a hit, or join a production committee and increase their investment ratio. If a company is unable to do so, it can only receive the animation budget as part of its "advertising and publicity expenses," which means that no matter how big the hit is, it will not lead to income, and as a result, the company will not make any profit. However, there is now a growing number of animation companies that are contracting with companies that distribute their original animations over the Internet, as is the case with foreign animations. (Ref.2) This has enabled them to produce animation with a larger budget and greater creative freedom than in the past.

d) Roles in animation production

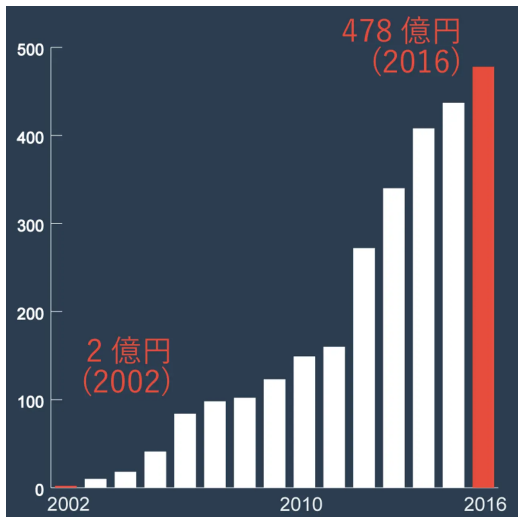
The first job of a rookie animator is to be in charge of the motion picture man, who draws the motion pictures for the animation. 24 pictures are needed to make a one-second animation, so a 25-minute animation requires about 36,000 pictures, which means that it is necessary to draw them in a short period of time to meet the deadline. In addition to this, there are four other responsibilities: "original picture man," who roughly creates the direction and layout, "coloring," who colors and inspects the pictures drawn by the animators, and "shooting," who combines the completed cut materials to create the animation. When they become veteran animators, they are assigned to the director or general manager of each section.

e) Animator Support Organization

The Animator Support Organization is engaged in the production of crowd-funded animation, the establishment and operation of a rookie animator dormitory, animation workshops, and the holding of the Rookie Animator Grand Prize. So far, 24 animators have been supported by the dormitory over the past seven years, and there are currently 11 animators in the dormitory. According to the website, the dormitory has been expanded and is currently operating with the goal of creating a new animation production system that will return profits to animators. The crowdfunding campaign run by the Animator Support Organization is updated regularly. People can donate as little as 3,000 yen and receive original animation drawings and illustration books as reward, so if they can spread the word to animation fans, they can increase the size of the dormitory and the scale of support they provide. The current crowdfunding is shown in the document below. (Ref. 3) In addition, the previous project raised funds not only from Japan but also from overseas and was able to collect sufficient production costs, so the unit price of original drawings can be paid around 10,000 to 20,000 yen. This allowed us to pay the animators a unit price of 10,000 to 20,000 yen per original drawing, which is about 2 to 4 times the general unit price of original drawings.



(Ref. 1) From the "Animation Producers Facts and Figures Report 2019". "Average annual salary by age group,"



(Ref. 2) From BUSINESS INSIDER "Revenue from

Net-distributed animation"

第2弾・アニメファンのかでアニメーターの低賃金問題を改善したい！

animator_shien アニメ・漫画

¥ 現在の支援総額
216,000円

目標金額は10,000,000円

支援者数
27人

24時間以内に4人からの支援がありました

募集終了まで残り
74日

アニメファンのかでアニメーターの低賃金問題を改善したい！十分な制作費でアニメが作れる仕組みを作るため、今回は、平野綾さんの歌でアニメのミュージックビデオを作ります！

(Ref. 3) From CAMPFIRE

3 Conclusion

After learning about foreign animation production and salary structures, I realized that animation overseas and in Japan is not from the same standpoint, and it would be difficult to incorporate a similar system under different economic conditions. However, as mentioned above, the company has succeeded in incorporating a mechanism in that online distribution is becoming the mainstream. This is only a prediction, but in contrast to television, where children and minors can easily watch for free, I believe that the demographic of people who can watch online distribution will change somewhat. It will be interesting to see how this will change the animation industry in the future.

I also think that it is important to communicate the information about the low wages of animators both domestically and internationally. Japanese animation is very popular overseas, but most of its fans are unaware of the low wages for animators and, on the contrary, many of them think that the wages are high. Therefore, if people around the world are made aware of this problem, more people will be willing to support Japanese animation production. We, the general public, can support rookie animators by spreading the word about the "Animator Support Organization" and participating in crowdfunding campaigns (you can

donate as little as 3,000 yen, and in return you will receive original animation drawings and a collection of original illustrations). Support can be given at any time, as the organization is still active on an ongoing basis.

Looking ahead, I would like to actually talk to someone from the Animator Support Organization or an animator to learn more specialized information and the current state of the animation industry so that I can make more concrete proposals.

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Life-saving clothes

~Making refugees happy with color psychology~

5224 Runa Takahashi

Abstract

Today, the number of refugees in the refugee camp is increasing drastically, and lack of clothes in the refugee camp is regarded as a problem. Clothes are essential for people to guard our body from various dangers such as coldness. Many companies and organizations do some projects in order to supply the shortage of clothes, but it's a problem that the projects aren't known by many people and people can't take part in the projects easily.

Also, I think that the power of clothes can make the refugees happy, and supply a shortage of clothes in the refugee camp. First, I suggest doing UNIQLO's project in the regions instead of doing it in the school so that many people can join the project. Second, I suggest collecting clothes whose effect is good or whose color is bright in order to make the refugees happy by using color psychology.

1 Introduction

In 2022, the number of refugees and internally displaced persons in the world became more than one hundred million for the first time. (Ref.1) It means more than 1 percent of the world population is kicked out of their house because of dispute or persecution and live as refugees or internally displaced persons. They stay at refugee camps, but there are many problems and I paid attention to the problem of lack of clothes. In refugee camps, clothing is in such short supply that no one can wear a T-shirt and socks even when it is cold. This is why UNIQLO's "Delivering the Power of Clothes" project caught our attention. This is a revolutionary project that saves refugees and reduces the number of disposable clothes, but there are some problems with this project. One of the objectives of this research is to find solutions to these problems. The project also aims to support the lives of refugees by providing them with clothing to protect their lives from the cold and other factors, and to use color psychology to make them feel happy. We believe that because there is a lack of clothing in refugee camps and refugees wear the clothes they are given, clothes that are already dirty, cut, and cannot be called decent clothes, they are unable to feel the joy of choosing something that we can take for granted. We wanted to make the refugees feel happy through color psychological effects, and although this is far from achievable, we wanted to make their wishes

come true and for them to feel the joy of choosing clothes.

Ultimately, the goal is to achieve mental and physical health for refugees through clothing, which is related to SDG #3, "health and well-being for all." We also believe that by providing and reusing clothes that can no longer be worn instead of throwing them away, we can help reduce the amount of clothing waste. This is also related to SDG #12, "Responsible Consumption and Production," which aims to ensure sustainable production and consumption patterns.

As for prior research, UNIQLO as well as various other organizations have been collecting clothes and sending them to refugee camps. However, we considered that there is an issue that it is difficult for individuals to participate in this activity because it costs money to send clothes and the collection is done on a school-by-school basis. In addition, as far as we could find, there were no previous studies that related color psychology to refugees, but there were some studies on the psychology of clothing, which is the psychological impact of clothing.

The method of the research was to consider how to encourage more people to participate in the project that UNIQLO is already implementing, and at the same time, to investigate the effects of dress psychology and color psychology on humans, and to clearly consider what kind of clothing and what colors are effective in making refugees feel happy. We will make a concrete plan to work on this in cooperation with companies and other organizations in the future. In order to do so, it is necessary to obtain opinions from experts in color psychology and to verify whether color psychology is really effective.

2 Discussion and implications

Delivering necessary clothing to refugees would be unrealistic and expensive by ourselves, which would reduce the number of people who would be willing to help. Therefore, we focused on UNIQLO's "Delivering the Power of Clothes" project as a previous study. To date, a total of 230,000 children from 2,204 schools have participated in the project, and approximately 3.39 million pieces of children's clothing have been collected.

The project delivers unwanted clothes to refugees through the following process.

(1) Learn about the power of clothes.

(UNIQLO and GU employees serve as instructors for the classes.)

→Provide children with an opportunity to learn about the SDGs, the significance of recycling, the

power of clothes, and how to use the collected clothes, and to realize that there are social contributions that they can make.

(2) Call for cooperation within the school and in the community.

(Assign roles, create posters and collection boxes, etc.)

→Call for cooperation in the school through announcements and school assemblies, and visit nearby elementary schools and kindergartens to explain the project with handmade picture-story shows, etc. The children's free thinking and energy are put to good use.

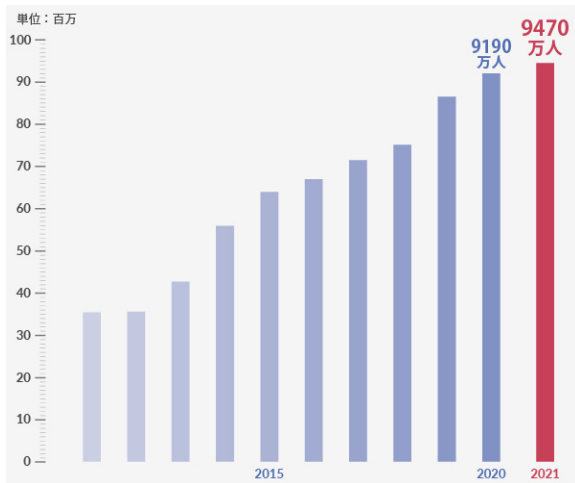
(3) Clothes are collected and shipped to the warehouse.

(4) A report on the donation of the clothes is received.

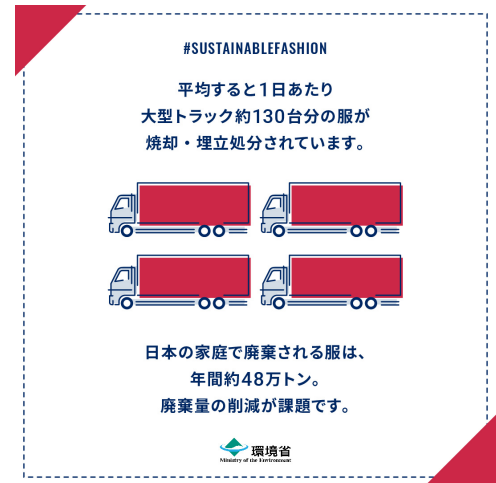
(Photo report of the donation to the refugee camp)

3 Conclusion

In order to provide clothing that protects refugees from the cold through the project and to regulate the mental and physical state of the refugees through the relationship between clothing color and psychological processes, it is first necessary to collect enough clothing for all refugees in the refugee camps to have clean and warm clothing, with emphasis on bright, non-negative colors, such as orange and pink. Also, the collected clothing should be distributed evenly. However, it is difficult to collect color-specific clothing when there is not enough clothing available. Of course, the priority is to ensure that everyone living in the refugee camps receives clothing, so we would like to collect clothing in all colors, not just orange and pink. It will be necessary to appeal for the collection of pink and orange clothing and to distinguish between pink and orange clothing and other clothing when distributing the clothing, and to distribute each to all households equally. To distribute them evenly would require collecting the same number of pink and orange clothes as the number of households in the refugee camp, which is not very feasible at this stage. In addition, in order to reduce the amount of discarded clothes (Ref.2), which is currently considered a problem in Japan, by collecting clothes, more schools must participate and more clothes must be collected. In addition, not only schools, but also companies and local communities need to participate and collect even more adult clothing. Therefore, more concrete solutions to these problems need to be considered in the future.



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Ref.2

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Activation of Domestic Agriculture and Rural Mountainous Areas

~Tourism In COVID-19 Pandemic Involving Farmhouse Inn Rented Its Whole Building~

5225 Yui Nishizawa

Abstract

This paper proposes a solution to some domestic issues in rural regions. I would like to offer a new tourism plan for staying in farmhouse inns in rural areas, with its advantages in the current pandemic. Nowadays, the shortage of farmers, aging society, and depopulation of rural areas are becoming more severe problems in Japan. To solve those domestic problems, I suggest tourism in Japanese rural or mountainous regions, including staying in farmhouse inns is effective. COVID-19 has made limits on the travel industry a lot. Even though the situation is getting stabilized, people still request enough hygiene management in every facility. However, provided the current recovering needs of domestic tourism, farmhouse stay has many advantages to activate the countryside, particularly in the situation of this pandemic.

1 Introduction

These days, shortages and aging of domestic agriculture are serious problems. the 2020 Census of Agriculture and Forestry (2022) and Dynamic Statistics of Agricultural Construction (2022) published by the Ministry of Agriculture Forestry and Fisheries show that situation. It says that the number of core persons mainly engaged in farming was about 2.4 million in 2000. And it decreased gradually to about 1.76 million people in 2015. At last, it became about 1.22million in 2022. Also, the Ministry of Agriculture, Forestry, and Fisheries (MAFF) said that although core agricultural workers slightly increased within these 5 years in the age range of 20 to 49 and 60 to 69 years old people, the entire number of farmers greatly decreased because a great number of over 70-year-old people retire their job (The Annual Report on Food, Agriculture and Rural Areas in Japan, 2022). Therefore, this slight increase cannot be enough to improve the situation. I thought we should secure agricultural workers including young people and keep them from quitting farming. Thus, I suggest that we activate rural mountainous areas where many farmers are working to deal

with this issue and came up with a concrete idea and its advantages considering the current pandemic.

2 Discussion and Implications

I made a hypothesis that rural tourism including Farmhouse stays is practical, especially during the COVID-19 pandemic for the activation of its areas and agriculture. This type of sightseeing can capture attractions from young people, and provide them with opportunities to experience lives as farmers. The fascination of being in the region can also be spread. I set the theme and looked for evidence on the Internet. I would like to show some information that proves my hypothesis.

Firstly, these days, people are still demanding a high level of clean hygiene for accommodation facilities (Jaran Research Center,2022). “Employees there are wearing masks and sanitizing their hands and whole stuff” was desired most:37.4%. From this perspective, the farmhouse inn renting its whole building for 1 party per day can fill one of the inevitable criteria to be chosen by tourism for their safe sightseeing. Moreover, the same survey shows that people who are going to travel or planning to do it occupy 32.4%, and this ratio has been increasing since January 2022. When we add people who are willing to go travel but still waiting and seeing the situation or trends to the former 32.4% of people, those who are eager to travel occupy 65.5%. This has been over 60% since March 2022. Plus, the ratio of people who answered “I am going to travel” although they hardly went on a trip increased. Therefore, the domestic tourist industry is getting active and will keep thriving. With this circumstance, my solution will be able to stimulate rural areas effectively through tourism.

In addition to this, moving to the countryside is drawing attention among residents in Tokyo. According to the “Survey About Changes of General Public’s Views and Behavior Under COVID-19 Pandemic” (Cabinet Office, 2022), the ratio of 20’s residents of Tokyo who are curious and desire to move to the countryside was 32.1% in December 2019. However, it became 45.2% in June 2022. When we focus on only 23 wards, it was 50.9% at the same time. The most common reason was “I was fascinated by its low population density and rich natural environment”. People who answered that increased from 28.8% to 34.5%. In this way, the growing interest in the countryside of young people can be observed.

Since they are rented to one party per day, those residents can avoid contact with others and hosts can have much time to sanitize some staff.

Therefore, I suppose that those provided data were sufficient to say that domestic rural tourism with farmhouse inns is effective for the activation of agriculture and rural mountainous areas.

3 Conclusion

Some surveys and statistics showed an increasing willingness of traveling and moving to the countryside, but there are a lot of criteria for accommodation facilities to be used safely during this COVID-19 pandemic. Thus, rural tourism including farmhouse inns renting their whole buildings to one party per day can stimulate depopulated rural areas where farmers mainly work there and will capture the attraction from young people. Finally, those curious will lead to the activation of domestic depopulated areas and agriculture in a long term. I still have some questions such as the budget or how to differentiate it with specific advantages from other sightseeing as a next theme.

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happiness for people
Kakyo bring happiness more and more

5226 Yudai Hirai

Abstract

Adolescence, a time when many children who have just gained some knowledge are faced with life-altering choices that make them think about what life is all about. This is true for me without exception, and it is one of the ongoing concerns that I am forced to think about. After three years of FEWC activities, I have come to the conclusion that in order for the people to feel happy, the government must first win the support and trust of the people. This year has been a year of thinking about how to solve this problem, and so far we have come up with two ideas: increasing exposure to politics in school education, and implementing the National Examination for Japanese Language and Literature (KAKYO) and the National Examination for Japanese Language and Literature (DENSHI). The first one is literal, and the problem is that we don't know what the second proposal means. This is a system of recruiting officials that has been in place for a long time in China, and it has attracted people who are able to swear loyalty to the nation and have no ulterior motives, which is convenient for my research. The problem with this, however, was that the curriculum was not about politics, but about memorization and the ability to hone one's literary sense to write well, so I decided to adopt the bar exam as the modern curriculum. The problem that comes up here is that some people take it for the money. However, I believe that if you have some practical skills, even if you have an ulterior motive, you can still run a good political system.

Introduction

After three years of FEWC activities, I have come to the conclusion that in order for the people to feel happy, the government must first win the support and trust of the people. The two proposals that have emerged so far are to increase exposure to politics in school education and to implement the National Examination and the National Examination for Japanese Language Proficiency Tests.

The first one is literal, and the problem is that we don't know what the second proposal means. This is a system of recruiting officials that has been in place for a long time in China, and it has attracted people who are able to swear loyalty to the nation and have no ulterior motives, which is convenient for my research. The problem with this, however, was that the curriculum was not about politics, but about memorization and the ability to hone one's literary sense to write well, so I decided to adopt the bar exam as the modern curriculum. The problem that comes up here is that some people take it for the money. However, I believe that if a person has some practical ability, even if he or she has an ulterior motive, the politics will turn out well. However, another problem is that if the existence of ulterior motives is revealed, even if politics is successful, it will not lead to winning the support and trust of the people, which was the original goal of the government.

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Solution For Sexual Minorities

~Try To Make Solution Without Law~

5227 Mizuno Rukiya

Abstract

When I researched sexual minorities, I found that they are a problem all over the world, and in many of these areas, discrimination is practiced or criminalized. This is not an easy world to live in. Through this research, I wanted to make the world a better place to live by eliminating discrimination and other forms of discrimination through voluntary action, rather than through forced action by law.

I researched the legal systems for sexual minorities in the world, and based on the usage I learned from the research, I searched for various success stories and experiences of countries that have successfully established laws. In the process of doing so, I wondered whether legislation is what is necessary to eliminate discrimination. I wondered if there was any other way to achieve better places through people's motivated actions, and researched the creation of an equal space for companies. As a result, I found out that many countries and companies evaluate the equality space of companies, quantify and rank the results, and include content related to sexual minorities in human resource development.

Thus, I came to three conclusions: evaluate companies on their equality space, evaluate them on the content of their human resource development work, and improve their job search websites.

Introduction

I often feel that my sense of what everyone says is cool or cute is extremely off. And I believe that this may also affect my romantic interests. This realization has made me interested in sexuality. I chose this research topic because I knew that there are many LGBT people from minority backgrounds in many parts of the world, and that there are about 77 countries in the world where homosexuality is currently considered a crime. Other countries do not protect homosexuality, or only provide limited protection for it. This causes a lot of bullying and discrimination, and the global economic loss is estimated to be over 3 trillion yen. We believe that this is something that should not happen to the world or to individuals.

In view of this reality, the purpose of this research is to eliminate prejudice against LGBT people from the other aspect of law.

Research Methods

In order to learn about the current situation of sexual minorities in the world, the legal systems related to sexual minorities were investigated. From there, we will study countries that have succeeded in protecting sexual minorities. As a result, we decided to change direction from the question of whether legalization is the best way to eliminate discrimination and to try to eliminate discrimination through education. We looked into recurrent and early childhood education methods, but we thought that it would be difficult to have an impact on developing countries and that it would not be effective unless the entire company was involved in the effort. We researched on the Internet to find out about protection for sexual minorities that companies are working on, events they are participating in, etc., and used books to study how companies are doing it.

Research Results and Discussion

As for the current state of sexuality legislation in the world, there are 74 countries that treat homosexuality as a crime, and 55 countries that do not protect it, accounting for more than half of the world's sexuality legislation. Furthermore, only 11 countries have constitutions or other forms of protection, indicating the need for reform in LGBT awareness in most parts of the world. A survey of 39 countries by the United Nations Information Center found that the persecution of sexual minorities has caused approximately \$3,500 in damages.

The UN and many other countries are working to improve their laws in order to overcome this situation.

However, it is very difficult to make a law to save such people from the actual company entrance examinations, and it is not easy to check whether the law is working or not. We also considered changing attitudes toward discrimination against sexual minorities through recurrent education and education from early childhood, but this approach was difficult to influence in developing countries, and the aim of education for young children and the aim of education for sexual minorities in young children were different, making it difficult. Therefore, we decided to focus on corporations and try to eliminate discrimination through the elimination of discrimination in corporations.

Discussion and implications

The research questions for this study were: What methods can be used to promote the elimination of discrimination through motivated action, and in what situations, and with what people, would these methods be more effective?

The first is to evaluate corporations. An American human rights NGO has a Corporate Equality Index. To briefly explain how it works, a questionnaire on corporate equality is sent to large corporations, and the responses are rated on a scale of 1 to 100, with no response required. Even if no response is received, the company is evaluated on the basis of publicly available information. There are many other initiatives like this, with various companies using different evaluation criteria. I focused on this initiative because I think it is a good initiative that can promote people's willingness to create equal space, i.e., eliminate discrimination. The good thing about these initiatives is that they can be quantified and easily understood, but even if each company uses its own evaluation criteria, they cannot be compared from a global perspective. Therefore, I came to the conclusion to create a new evaluation standard and a new organization to evaluate it, based on this initiative. There are two main reasons for making the criteria common worldwide. First, it will allow us to compare and evaluate without borders. It is believed that a new environment called "Society 5" will be introduced in the future. Society 5 means that the world will be able to operate without any barriers such as national borders. This means that the problem of sexual minorities is no longer an issue for one's own country alone, but must be solved in cooperation with the rest of the world, and data that can be compared regardless of national borders will be necessary. I also thought that the evaluation standards and evaluations left to companies in the region may differ greatly from those in developed LGBT countries due to differences in the way of thinking.

Next, I thought that the Recurrent Education and Human Resource Development Project should be utilized and evaluated. Recurrent education is a program in which working adults can relearn and relearn again, and while it is not very popular in Japan, it is becoming the norm in other countries. According to the LGBT Research Institute, while many people agree that it is desirable to promote proper understanding of LGBT people, 58.9% of LGBT people expressed the need for proper understanding so as to avoid discriminatory words and actions. These findings indicate that the difficulty in creating equal space is not only due to people's awareness, but also to a lack of knowledge. Therefore, we thought that by introducing the program into human resource development programs, which are the most accessible to companies, it would be easier to create equal space.

We also thought that in order for LGBT content to be actively introduced, it would need to be evaluated. In the same way as the corporate equality evaluation index, we thought that by evaluating the content of training and lectures, we could create a competitive edge and encourage the active introduction of LGBT content.

The final proposal was to improve the job search website. The reason why we are using a job search site is because of the way people will be working in the future. It is believed that in the future society will demand flexible work styles, and people will be able to change jobs and advance their careers accordingly, which is known as "Society 5. This is called "Society 5." Therefore, companies will put more effort into mid-career hiring, and job search sites will become more important as a result. What I would like to propose is to improve the evaluation items on job search websites. Currently, job sites mainly list employment status, salary, working hours, and benefits. While these items are very important for people changing jobs, we believe that it is also necessary to include items such as the atmosphere of the company and other factors that make it easy to work there. This is why we have come up with the idea of introducing a Corporate Equality Index. This would not only be beneficial to sexual minority job changers, but also to companies, as the introduction of these evaluation items would encourage them to become interested in the Corporate Equality Index and apply for jobs, which would have the effect of actively working to create an equal space.

Conclusion

The problem of sexual minorities is no longer an issue for one's own country alone, but must be solved in cooperation with the rest of the world, and data that can be compared without regard to national borders is needed. Therefore, we thought that internationally standardized criteria were necessary. We also need to utilize the human resource development industry to meet these standards, or to restructure programs.

Finally, as companies focus more on mid-career hiring in the future, job search websites will also become more important, so it is essential to improve the evaluation items on job search websites. We believe that it will be necessary to include items such as company atmosphere and other factors that make it easy to work at a company. We have therefore come up with the idea of introducing a corporate equality evaluation index. This would not only be beneficial to sexual minority job seekers, but would also create an opportunity for companies to become interested in the Corporate Equality Index and apply for jobs, which in turn would have the effect of actively working to create an equal space.

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The poverty saved by job creation and improved nutrition

~Disseminate the International Carrot Project~

5228 Manami Miyata

Abstract

In Sub-Saharan Africa and South Asia, there are many children under five years old and people who die of poverty due to child marriage and malnutrition. In order to solve this problem, which has not yet been solved despite many international efforts, I propose to introduce “the International Carrot Project” in Sub-Saharan Africa and South Asia. In this project, carrots will be sold to places where children under five years old gather, and couples will be paired up in these areas, with the men growing and harvesting the carrots and the women processing and selling them.

1 Introduction

According to the International Poverty Line, the common definition of poverty in the world is \$1.90 a day since 2015. This is 216.67 yen in Japanese yen. More than 800 million people in the world live in extreme poverty on such an amount of money everyday. In September 2009, the United Nations Millennium Declaration (MDGs) was adopted at the United Nations Millennium Summit, setting eight major goals that the world would like to achieve by 2015. However, although some extent of achievements including poverty were made in multiple areas, issues remained, such as the under-five mortality rate, the employment rate, and the disparity between women and men in political participation. There are still more than 6 million under-five deaths, with more than 14,000 children dying every day.

From the above, I thought the problem is that we have not been able to eradicate the global problem of poverty yet, even though we have set goals worldwide and made efforts in each country. In addition, in recent years gender equality and women's social advancement have been advocated. However, women's social advancement is declining in the region of sub-Saharan Africa and South Asia, which is the subject of this research, and there is a gender disparity. In terms of women's social advancement, I think the disparity between these regions and the rest of the world, especially in developed countries, is also a big problem. Moreover, I think the biggest challenge in these regions is the vicious cycle. Suffering from poverty, child marriage and early pregnancy will increase in order to increase the number of workers right now. These young parents enter the workforce without adequate education,

making it difficult for them to secure a stable job and income. Children born into such families also become parents without adequate education due to poverty. I acknowledge this disparity between specific regions and the world, which some big organizations such as the United Nations could not solve.

2 Discussion and implication

First, we looked at the poverty situation in the world and decided the target areas for this study. According to the United Nations Development Programme, more than 80% of the world's people living in extreme poverty live in South Asia and sub-Saharan Africa. Currently, about 390 million people in Sub-Saharan Africa and about 256 million people in South Asia are said to be suffering from poverty. In addition, these two regions have major challenges not only in poverty, but also in under-five mortality. According to the Japan Committee for UNICEF, "When looking at the annual number of under-five deaths (2015) by region, sub-Saharan Africa had the highest number of 3 million, followed by South Asia with 1.8 million." Based on these facts, I thought that by recommending activities to promote poverty eradication in these regions, South Asia and Sub-Saharan Africa, we would be able to get closer to the goal of eradicating poverty throughout the world.

The next step was to examine the common points between the two target regions in terms of causes of poverty and notable non-poverty challenges compared to other countries and regions. The main causes of poverty in both regions were lack of education and food problems (malnutrition and stunting). In South Asia, the causes include education, malnutrition and stunting, low literacy rates, abuse, and human trafficking. In Sub-Saharan Africa, the causes include education, medical infrastructure, corruption, civil war, and food problems.

Next, I found that there are challenges of child marriage in these regions. Child marriage refers to marriage at the age of under 18. While child marriage has been declining in the world in recent years due to increased school enrollment of girls and awareness of the illegality of child marriage and its harmful effects, it is on the rise in Africa, widening the gap in the world. Currently, world's girls married under the age of 18, 285 million, or 44% of the world total, are South Asian girls, and 150 million, or 18% of the world total, are Sub-Saharan African girls.

And there is also a marked decline in the employment rate of women, further widening the gender gap.

Furthermore, child poverty rates are also high. According to the United Nations, in 2018, the under-five mortality rate was 78 in Sub-Saharan Africa and 48 in South Asia, compared to 4 per 1,000 in Europe and Central Asia and 15 in East Asia and Pacific countries, which is higher than the global level. An examination of the causes of death among children in regions with high under-five mortality rates reveals that more than half of the children who die in Africa are related to malnutrition. With the number of deaths rising to 3 million, we realized that improving child malnutrition would certainly reduce the under-five mortality rate. First, to prevent malnutrition, breastfeeding and complementary foods are necessary. In addition, micronutrients and vitamin A should be administered. Zinc and iron are also important, according to the JCU. From the World Children's White Paper 2019, a comparison of complete vitamin A supplementation rates by region of the world shows that the "East Asia and Pacific countries" have a 74% supplementation rate, while South Asia with its high poverty rate has a 66% rate and Sub-Saharan Africa has a low rate of 55%. We hypothesized that the vitamin A intake rate may have some relationships to poverty and under-five mortality.

表8 栄養指標：就学前と学齢期の子ども、女性および家庭

国・地域	就学前の子どもにおける栄養不良 (0~4歳) 2013~2018*						ビタミンA 完全 補給率* (%) 2017	学齢期の子ども における栄養不良 (5~19歳) 2016		女性における 栄養不良 2016		ヨード添加 塩を消費する 世帯割合 2013~2018*
	発育阻害 (%) (中度および重度)			消耗症 (%)		過体重 (%)		瘦身 (%)	過体重 (%)	18歳以上の 低体重 (%)	15~49歳の 貧血 (%)	
	すべての 子ども	最も貧しい 20%	最も裕福な 20%	重度	中度および 重度	中度および 重度		瘦身および 重度の瘦身	過体重お よび肥満	BMI <18.5kg/m ²	軽度、中度 および重度	
地域別等価的												
東アジア・太平洋諸国	8	44 q	22 q	1	3	6	74	6	23	8	27	92
ヨーロッパ・中央アジア	-	-	-	-	-	-	-	2	26	2	23	-
東ヨーロッパ・中央 アジア	9 a	18 q	8 q	1 a	2 a	15 a	-	3	23	2	28	-
西ヨーロッパ	-	-	-	-	-	-	-	1	30	2	18	-
ラテンアメリカ・カリ ブ海諸国	9	24 q	7 q	<1	1	7	-	2	30	3	22	-
中東・北アフリカ	15	-	-	3	8	11	-	6	31	3	34	-
北アメリカ	3 d	-	-	<1 d	<1 d	9 d	-	1	41	2	13	-
南アジア	34	51	22	5	15	3	66	25	8	23	50	89
サハラ以南のアフリカ	33	46	20	2	8	4	55	7	10	10	39	80
東部・南部アフリカ	34	42	22	2	6	4	57	7	11	9	31	82
西部・中部アフリカ	34	50	18	2	6	4	53	9	10	10	48	76
後発開発途上国	32	45	22	2	8	4	58	10	10	14	40	74
世界	22	45	20	2	7	6	62	11	18	9	33	88

すべての国と地域のリスト（ユニセフ地域分類・同地域小分類、開発途上国分類の詳細）については182ページか <data.unicef.org/regionalclassifications> を参照。過去に出版された一連の「世界子供白書」とのデータの比較は推奨されない。

To test this hypothesis, I examined the relationship between vitamin A intake and poverty, and found that vitamin A supplementation programs around the world have been shown to reduce child mortality from infectious diseases in several countries, according to the JICA Research Institute. In other words, increased vitamin A supplementation rates lead to reduce child mortality. Based on this, we aim to improve child malnutrition and reduce the under-five mortality rate by promoting vitamin A supplementation rates.

これまでの栄養補給プログラムにおいて特に目覚ましい成果がみられるのは子どもの感染症による死亡率の減少^{7, 8}、そして女性の妊娠に関連した原因による死亡率^{9, 10}などである。表3-2にこれまでの補給プログラムの実施内容の例とその効果を示す。

表3-2 ビタミンA投与プログラムの報告例と効果

著者名(出版年)	実施国	サンプル数、投与量&頻度	結果
Sommer A et al. (1986) ¹¹	インドネシア	12-71ヶ月の幼児25,939人 6ヶ月毎に200,000IU	34%の死亡率減少
West KP et al. (1991) ¹²	ネパール	6-72ヶ月の乳幼児28,630人 4ヶ月毎に60,000レチノール相当 6-90ヶ月の乳幼児21,906人	30%の死亡率減少
Ghana VAST study team (1993) ¹³	ガーナ	4ヶ月毎に200,000IU(12ヶ月未満:100,000IU)	診療所を受診、あるいは入院する子どもの数の減少 死亡率減少
Stoltzfus RJ et al. (1993) ¹⁴	インドネシア	産後1-3週間の女性153人、 312 μmolのVA入りカプセル、 既婚女性44,646人	母乳内、そして乳児の血中レチノール量の増加
West KP et al. (1999) ⁹	ネパール	毎週7,000 μg相当VAまたは42mgのβカロテン	女性の死亡率44%減少

In addition to vitamin A, there are other nutrients necessary for improving malnutrition.
-about Iron-

Iron deficiency causes anemia, which in small children can seriously affect their growth and intellectual development. It is also a problem for the learning ability of school-aged children, as they lose their appetite and become tired easily. Unlike vitamin A, iron is a nutrient that needs to be taken a little bit every day, but it is difficult to give them pills every day, and there is no simple, cheap and effective solution.

From Ms. Kyoko Okamura, Japan Committee for UNICEF

According to the JICA Research Institute, to prevent iron deficiency, it is effective to improve dietary habits, namely breastfeeding nutrition, and teaching children to consume iron-rich foods such as liver, meat, egg yolks, green vegetables, cereals, legumes, and nuts. Other iron-fortified or iron-added foods may also be used. Standard iron supplementation is 1-2 mg/kg/day for children and 60 mg/day for adults.

If possible, under-fives should also receive other nutrients besides vitamin A, such as iron and zinc.

The study also examined the activities currently being undertaken by governments to promote poverty eradication in Sub-Saharan Africa and South Asia. First, the MDGs are specific achievement goals that were once set by the international community. According to the Ministry of Foreign Affairs of Japan, in September 2000, the United Nations set eight major goals to be achieved worldwide by 2015. They were designated the "Millennium Development Goals (MDGs)," and the major goals were set in place for 15 years. Naturally,

detailed numerical targets were set for each of several areas, including poverty, but in reality, not all of them were achieved, and challenges remained (although improvements were seen), and the MDGs became the SDGs, requiring governments to act toward a more sustainable world. In particular, according to the United Nations Public Information Center, the reduction of child and maternal mortality rates for children under 5 years of age is far short of the target level, and a large gap still remains between the status of women and men in terms of employment rates and political participation.

As for concrete measures taken by developed countries to address poverty in developing countries, they mainly provide financial and material assistance. According to the Ministry of Foreign Affairs of Japan, Japan has hosted the Tokyo International Conference on African Development (TICAD), an international conference on African development led by Japan, every five years since 1993 under the joint sponsorship of the United Nations and other organizations, as a cornerstone of Japan's support for Africa. The basic principles of TICAD are African self-help efforts (ownership) and support from the international community (partnership), Asia-Africa cooperation, human security, and respect for African diversity.

In addition, for South Asia, the main fundraising activities include distribution of food, support for raising livestock for protein sources such as milk and eggs, vegetable cultivation in family gardens and cooking instruction, training in child nutrition and health care (food aid), installation and use of latrines, awareness of hygiene practices such as hand washing, water well quality surveys and distribution of water purification filters, and promotion of health check-ups for pregnant and nursing mothers (sanitation aid),(hygiene support), etc., funded mainly through fundraising.

Based on these facts, we thought that the reason why there are still people suffering from poverty in the world despite the fact that many funds and goods are currently provided to developing countries is that the activities and efforts we investigated are basically only temporary support. Even if food supplies are provided, they will eventually run out again, and even if they are surveyed and maintained once, they will become decrepit and depleted again after years of recognizing the current issues and providing only a kind of first aid. Donations and government aid are also finite aid, not infinite, depending on how it is used. We felt that one-way, temporary assistance from developed countries to developing countries may not be effective when viewed as a long-term outcome. In order to solve this problem, activities that are sustainable, that is, activities in which people suffering from poverty take the initiative in

creating things, are necessary. However, as it stands, those people are inadequate in terms of resources and technology.

Therefore, in this study, rather than simply providing financial and material support, we propose activities that can be carried out by local people on their own initiative while still being supported by the government, so that the effects obtained when implemented over a period of several decades will be significant.

3 Conclusion

In conclusion, we propose to introduce “the Carrot International Project” in Sub-Saharan Africa and South Asia regions. In these regions, married couples would be paired up, with the man growing and harvesting the carrots and the woman processing and selling the carrots. The sales will take place in places where children under five years old gather. Currently, we are considering a children's cafeteria and a children's temple elementary school as candidates. In the future, we would like to consider whether the climates of Africa and South Asia are really suitable for ginseng cultivation.

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Towards a world where LGBT becomes “normal”

—Aiming for a world where you can live as you are—

ID5229 Name Tomoka Morita

○Outline of Research

Today, not only in Japan, but also all over the world, LGBT people are being discriminated against. In recent years, we often hear the word LGBT on news programs, etc. Why should we be discriminated against? And I decided to do this research because I wanted to create a world where people from all over the world can freely fall in love. And this research focused on our parents' generation, which is commonly called "middle-aged and elderly". In Japan today, there are classes on gender equality, and it is optional to enter gender in questionnaires, but it seems that there was no such thing in the past. Because men were men and women were women, clothing, hairstyles, and other things were regulated.

Based on this, I would like to conduct research to deepen understanding of homosexuality among middle-aged and elderly people, and at the same time, to create a world where the younger generation can create a freer society.

1. Introduction

One of the purposes of this research is to raise awareness of the partnership system.

At present, same-sex marriage is not legally recognized in Japan, and local governments have decided that a partnership between two people is equivalent to marriage for same-sex couples who are registered as same-sex couples. It is a system that can be expected to have a certain effect, such as being approved to move into public housing and being treated as family at a hospital, by receiving approval and issuing a certificate by the local government.

The problem with this system is that it is not legally protected, so it is not possible to receive the same treatment as married couples. Also, since same-sex marriage is being recognized in many countries, I thought that a system should be introduced in Japan that would allow same-sex couples to receive the same treatment.

On December 8, 2021, Governor Koike of Tokyo announced that it plans to introduce a same-sex partnership system throughout Tokyo next year. I believe that this news will lead to a gradual change in public awareness.

The method is to use the Internet and take the current Japanese government's response to homosexuality and incorporate it into the community. It is also important to conduct interviews on the image of homosexuality among middle-aged and older generations, and to

consider what kind of activities are necessary for Japanese society in the future.

2. Discussion and implications

What I learned through this research is that many people in Japan still have resistance to homosexuality, but it is thought that the reason for this is that homosexuality is not familiar to them. It turns out there is.

What I learned from the comparison with other countries is that Japan does not prohibit homosexuality as a country, and it is a country that is not so strict in the world. In particular, in countries belonging to the African continent, homosexuality is not recognized, and if it is recognized as homosexuality, there are countries where fines, imprisonment, and even the death penalty are imposed. Looking at this situation, I thought that Japan was positive about LGBT after all. However, compared to areas such as the United States where same-sex marriage is allowed, I thought that there would be resistance because the people do not feel close to it.

When I think about why homosexuality is accepted in countries like the United States, I think it's because the local people are originally open. Also, I found out through research that there are many portrayals of homosexuals in western movies and dramas, so I thought that from an early age I would not feel uncomfortable with homosexuality.

In addition, Thailand is famous as a country where the country and people have an understanding of homosexuality, so much that it is called an "LGBTQ developed country". Specifically, the introduction of toilets that can be used by all genders and the introduction of 18 genders. Also, Thai BL dramas became popular all over the world during the self-restraint period, and I think that it was an opportunity to tell the world that Thailand is an advanced LGBTQ country.

But now, even in Japan, the number of anime, dramas, and movies that depict homosexuals is increasing. In addition, there are many examples of them boasting aspirational popularity, and there are many dramas that have been decided to be made into movies. Members of popular idol groups have been appointed as actors who play homosexuals in the drama, and it seems to be attracting the attention of young people. Through these works, I think that the image of homosexuality in Japan will change.

When I conducted a questionnaire about LGBT during the school year, many of the responses were positive about their image of LGBT, but I don't know because I don't feel close to them.

There was also an opinion, and it turned out that it was a problem that I could not feel familiar with. In addition, more than 90% of respondents answered that same-sex marriage should be legally recognized. In addition, when asked whether they would tell others if they identified themselves as LGBT, the percentage of those who answered they would not disclose was slightly higher. The reason is that I'm afraid of the eyes around me, and I'm afraid of rumors spreading. I found out that I care about the surrounding eyes. From there, I found the problem with people around us, that is, we have to change the image of people who fall under the category of LGBT.

3. Conclusion

What I would suggest for us to change is to feel that homosexuality exists and to keep in mind that it is an issue that the world will have to think about in the near future. I thought it might be. However, as the name LGBT is now being recognized in Japan, the question is how can we make people feel closer to us. In addition, since it is an issue related to the privacy of LGBT people, it is a current issue that we must investigate carefully.

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Muse to use

~The provision of a *community-based* music service~

5230 Morita Hikaru

Abstract

In this study, we have been exploring the practical power of music since the fourth year. As a result, we have learned from various precedents that music has two major powers: "the power of social support" and "the power of physical support. In this year's research, we have been studying the construction of a framework that incorporates both of these powers, and the expansion of this framework as a service that is closely connected to the community. The result of this research is the "MHC".

1 Introduction

Background and Objectives of the Study

The word "music" is usually translated into English as "music" in most cases. This word was originally taken from muse, the god of the arts in Greek mythology. Since ancient times, music has been recognized as an art form, and this understanding has remained unchanged to the present day. Music is an art form, to be appreciated and enjoyed as a form of entertainment. And therefore, the necessity of music is rarely discussed. Here, I thought that if I could find the usefulness and social significance of music, I could show people the practicality of music. What I discovered was the "power of social support" and "power of physical support" in music, which were the contents of my research until last year. This year, our research will focus on what kind of framework is needed to actually deliver this to people.

Research and Verification Methods

Steps in Research

1. Review the system devised in the previous year, and add and examine points for improvement and reinforcement.
2. Find out what examples of community-based services there are, along with factors that contribute to their success.
3. Revise the method of operation of the devised system in light of the precedents you have researched.

Specific Methods

April-June: Improvement of the previous year's system

July: Internet-centric survey of precedents

Aug: System reworking

September-December: Writing a thesis based on them

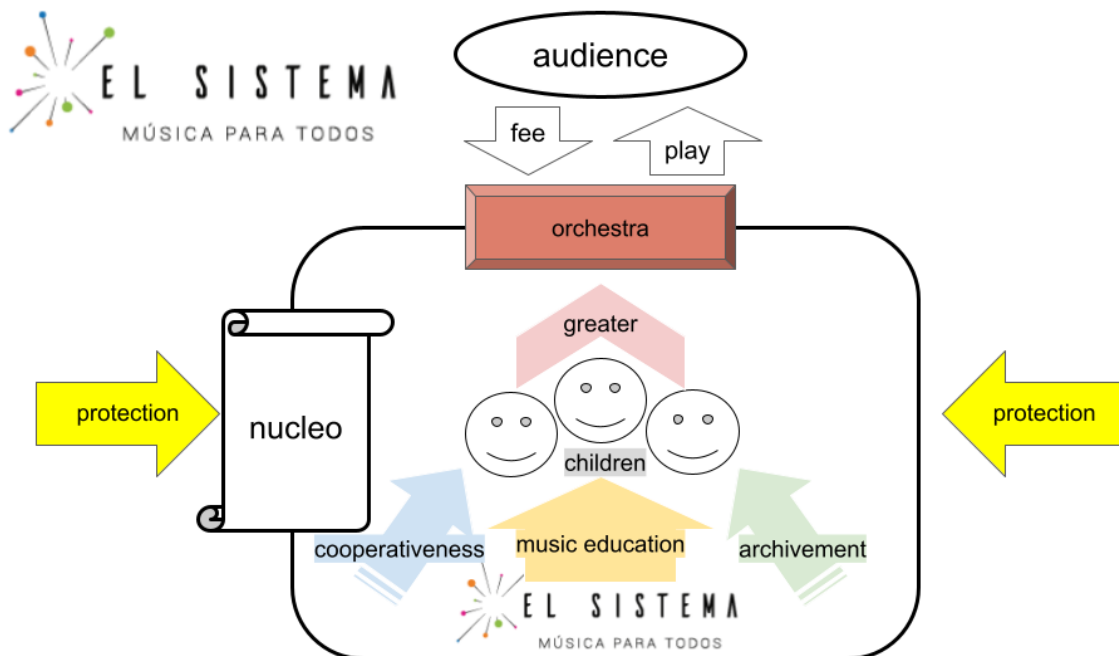
2 Discussion and implications

First, let me summarize the two powers of music that I have devised in the previous year.

(1) "The Power of Social Support" in Music

Reference example: "El Sistema" (Venezuela)

This is a support framework for children that uses music and originated in Venezuela, and is conducted by a non-profit organization. The main initiative is "free music classes for children. The program contributes to the development of children's cooperative spirit and the stabilization of public order.



Main activities and effects

- The safety of the children is ensured by having a large group of children in a facility called "Nucleo".

(Contribution to public safety)

- The free music education helps children develop the ability to achieve their goals and cooperate with others.

(Contribution to character development)

- Performance as a professional orchestra by some of the best musicians in the world.

(Contribution to society through art)

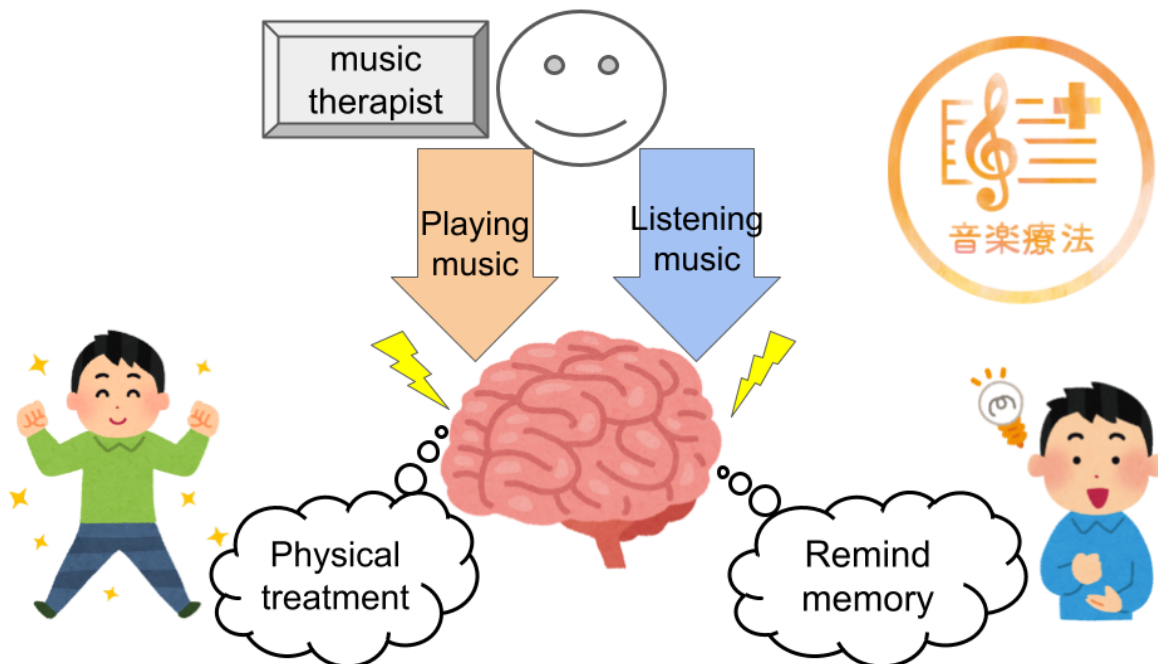
Fatigue issues

- Lack of leadership
- Lack of instruments
- Lack of penetration in the region (lack of recognition)

(2) "The Power of Physical Support" in Music.

Reference example: "Music Therapy".

A type of therapeutic activity that uses music. Nowadays, it is mainly used for the elderly, people with disabilities, and people with severe muscle-related physical disabilities. It is also said to be effective for memory-related conditions such as dementia. Scientific research is currently underway.



Main activities and effects

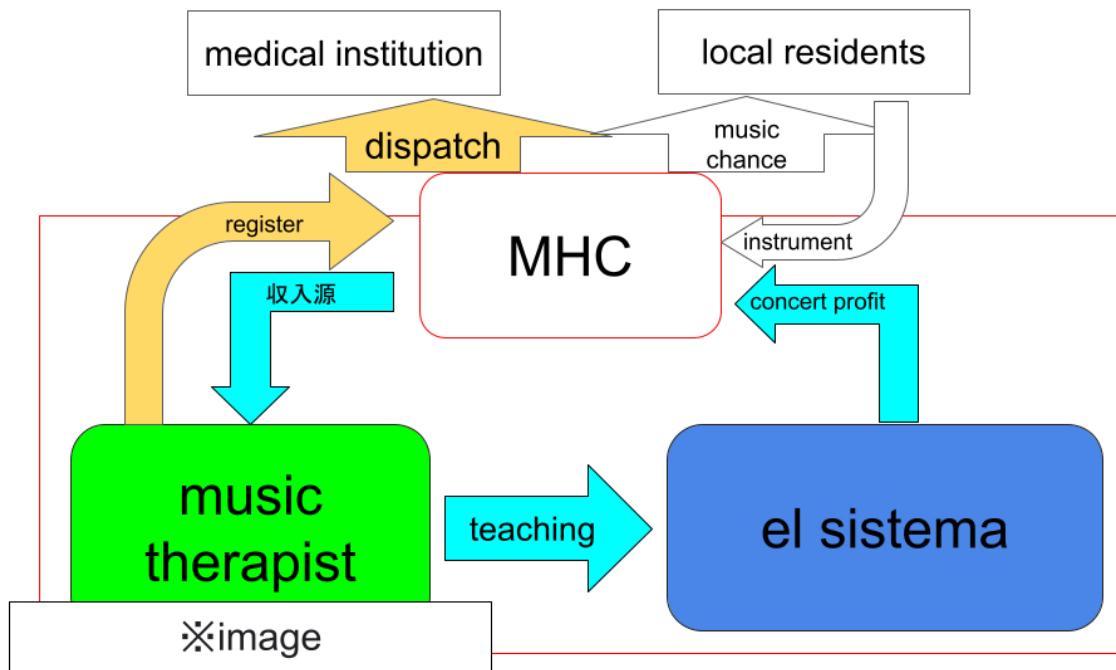
- Music experience using simple instruments and singing
(Improvement of physical function)
- Activating Experience through Music Appreciation
(Slight interference with memory)

Fatigue issues

- Not many places of employment.
- low profile.

3 Conclusion

The system I came up with based on these results is the "MHC (Music Hospitality Center)".



This is a support service through music that was conceived to combine the two strengths of music and to complement each other's challenges, and is a framework that serves as a bridge between the two organizations and society.

Main activities and effects

- Implementation of El Sistema
(Social support)
- Music Therapy
(Physical support)
- Registration and dispatch of music therapists to medical institutions
(Resolving the shortage of employers)
- Recycling of musical instruments in the community
(Elimination of instrument shortages and reduction in the amount of discarded instruments)
- Establishment of an open music exchange and consultation center
(Community penetration, visibility and community-based support)

Innovation "Sustainable Systems"

- Hire a music therapist as an instructor (to solve the shortage of instructors).
→ Use the proceeds from El Sistema concerts to pay for the instructors (to solve the lack of employment opportunities).

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5/12

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Immigration Problems in Europe

~Save both immigrants and citizens~

5231 Chihiro Yajima

Abstract

The problem of immigration in Europe is getting worse year by year. The number of immigrants in Europe, which continues to increase every year, has already reached a non-negligible number and has a great impact on the conventional life of the people. The impact of the increase in the immigrant population did not stop there, but it also gained political power. The immigration policy has a big impact on the approval rating. So the solution I came up with is to set a time limit for immigrants' stay. I believe that long-term stays are the biggest factor in strengthening these influences, so we can expect to have the effect of weakening the influence on European countries by making stays shorter than they are now. In addition, by giving immigrants an appropriate education and acquiring skills during their short-term stay, they will be able to make use of them when they return to their own countries after their stay, and will become a fundamental factor in the emergence of immigration. Aim to solve

1 Introduction

I became interested in the history and culture of Europe through my world history class. I set this theme out of the desire to solve it, and I am proceeding with the research. Much of the research on immigration is data-gathering. It clearly shows which country the immigrants are moving from to which country, the percentage of immigrants by country of origin, and the percentage of the destination country. I would like to think about how to use these to solve the problem.

This kind of research is basically based on searching on the Internet site while using the data of previous research. Since immigration issues are focused on the real-time situation, it is unlikely that books will be used.

2 Discussion and Implications

As you can see from the table below, European countries have a relatively high proportion of immigrants. Germany, in particular, has about 20% of immigrants in the country, and this has greatly tilted German politics. Immigration policy tends to be the most important issue in elections, and more and more immigrants have the right to vote, which

increases the support for candidates who openly accept immigrants. If immigration increases further as a result, this will become a vicious circle, and the German people will become more and more narrow-minded. Therefore, I would like to propose that immigrants have a period of stay.

移民数・人口・移民比率

	国名	移民数 (万人)	人口 (万人)	移民比率 (%)
1	米国	5,063	33,100	15.3%
2	ドイツ	1,576	8,378	18.8%
3	サウジアラビア	1,345	3,481	38.7%
4	ロシア	1,164	14,593	8.0%
5	イギリス	936	6,788	13.8%
6	アラブ首長国連邦	872	989	88.1%
7	フランス	852	6,527	13.1%
8	カナダ	805	3,774	21.3%
9	オーストラリア	769	2,550	30.1%
10	スペイン	684	4,675	14.6%
11	イタリア	639	6,046	10.6%
12	トルコ	605	8,433	7.2%
13	ウクライナ	500	4,373	11.4%
14	インド	488	138,000	0.4%
15	カザフスタン	373	1,877	19.9%
16	タイ	363	6,980	5.2%
17	マレーシア	348	3,236	10.7%
18	ヨルダン	346	1,020	33.9%
19	パキスタン	328	2,208	14.8%
20	クウェート	311	427	72.8%
21	香港	296	749	39.6%
22	南アフリカ	286	5,930	4.8%
23	イラン	280	8,399	3.3%
24	日本	277	12,647	2.2%
25	コートジボワール	256	2,637	9.7%

In general, visas are issued or residence permits are applied for, and stays are permitted for a corresponding period of time. Many immigrants enter the country illegally. Ideally, we would like to set up a system in which visas are not issued, and all foreigners are

allowed to enter the country after a two-year stay. As I wrote in the overview, I think it is dangerous to allow a five-year stay, because long-term stays produce many negative effects.

But for the next two years, it will be necessary to warmly welcome immigrants. Accepting immigrants is by no means a bad thing, but there are many good things about it, such as making up for the labor shortage if it is moderate. Therefore, rather than completely stopping the acceptance of immigrants, I would like to minimize the negative impact on the receiving country by setting restrictions on the length of stay.

3 Conclusion

By shortening the length of stay of immigrants, we believe that the above-mentioned adverse effects on local residents can be reduced as much as possible. For that reason, we need to make the procedures at the time of entry more reliable, so I would like to conduct research on that aspect in the future.

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Aquaforestry

~Becoming actively suriname's industry~

5301 AraiNoa

Abstaraction

Aqua forestry, the theme of this research, is an incredibly innovative system that I have devised to increase the profits of both the forestry and fisheries industries by conducting fisheries and forestry at the same time. Specifically, forestry is conducted on the top of a mountain where forestry is conducted, and aquariums for raising fish are set up along the slope in a structure similar to a terraced rice paddy field. This structure would allow the water to be used for aquaculture when it rains, and when the fish droppings and carcasses reach the bottom of the tank, they could be piped up to the top of the mountain for use in the forestry industry.

Introduction

•Background and Objectives of the Study

The world's population as a whole is currently growing. Therefore, we believed that the primary industry would not be able to keep up with the current industrial form. And now there is an industry called aquaponics, which simultaneously conducts both fisheries and agriculture. There is also an industry called agroforestry, which is simultaneously forestry and agriculture. These are some of the more efficient industries that have recently been increasing. However, we found that there is no industry that conducts forestry and agriculture at the same time. For this reason, I decided to create a system for such an industry.

•Status of Previous Studies

As mentioned above, my research is a new system and no previous studies exist. However, since it is difficult to create the system all by myself, I will consider the aquaponics system with some reference.

•Research and Verification Methods

Research and understand aquaponics research and build a system. After coming up with a system, actually build a model to confirm that the system you have created is successful. The results of the experiment will also be used to identify problems. The results are also sent to the experts to get better opinions.i

Discussion and implications

•Consideration

In this study, the system will be created with reference to aquaponics. The reason for referring to aquaponics instead of agroforestry is that, unlike agriculture and forestry, the fisheries industry requires aquariums.

This study will be conducted on a whole mountain that is actually used for forestry, because the land used for forestry is larger than that used for fisheries. Forestry is conducted on the top of those mountains and fisheries on the sides. However, as it is, there is no flat surface large enough to make an aquarium. Therefore, land to be cultivated can be minimized by building the water tank like a terraced rice field. In addition, the water used for forestry will be drained downstream. At this time, by building a water tank on a slope like a terraced rice paddy, water can be sent down the pipe without using electricity. At the same time, fish carcasses and feces are washed away together. When the water reaches the lowest level, it is also carried to the summit. Fish carcasses and feces are then used as fertilizer.

•Significance

By building this system in this study, we can conduct industry more efficiently than ever before. If we can do that, we will have enough food and timber to withstand population growth.

Conclusion

This study will be conducted on a single mountain in order to simultaneously conduct forestry and fisheries. The reason for conducting aqua forestry on land that is suitable for forestry rather than fisheries is that it is less expensive than building new land for aqua forestry, and it is better to conduct fisheries on land that is currently used for forestry because of the size of the land required at that time. The problem here, however, is that in the mountains, there are few flat surfaces on which to build aquariums. Here, I propose that the tanks be built like terraced rice paddies. I also thought of a way to conduct forestry at the top of the mountain and fisheries on its side. The advantage of this method is that the water used for forestry will flow into the tank. The water, along with fish feces and corpses, would be channeled through pipes to a tank further down, and when it reached the lowest tank, it would be discharged through pipes to the mountaintop to create a water cycle. The feces and corpses are then used as fertilizer.

The current challenges of this research are: first, it is unclear how much it will cost to create this system; second, the altitude of the mountain will limit the number of fish that can be kept there; third, building an aquarium in the mountain will increase the amount of time and effort required to maintain and feed the fish; and fourth, there is no way to know how much it will cost to build the system. Second, depending on the altitude of the mountain, the number of fish that can be raised may be limited. Third, building an aquarium in the mountain will require more labor for maintenance and feeding, etc. Fourth, there is uncertainty about how much water will flow into the aquarium each day because there is little to no watering in the forestry industry, and fifth, there is uncertainty about how much water will flow into the aquarium in the future. Fifth, the details of the model that I plan to build are not yet finalized. We can achieve good results by making it as close to the real thing as possible.

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Improving Health Care in Sub-Saharan Africa

—Health in Sub-Saharan Africa Through the Establishment of a New Healthcare System—

ID 5302 Name Yui Ando

Abstract

In order to improve healthcare in Sub-Saharan Africa, I propose the juxtaposition of online medical care and transportation services. The general structure of the project is to basically incorporate online medical care, and if a patient needs to go to the hospital for tests, etc., the transportation service will be utilized. We believe that the parallel use of online medical services and transportation services will result in a more efficient and effective system.

1 Introduction

I have been interested in medical care since I was a child because my parents are employed in the medical field or have medical qualifications. And I would like to work in the medical field in the future. Therefore, I wanted to learn more about the current situation in Japan and the world, and to think if there was anything I could do to help. For this reason, I set such "medical care" as my theme and began my research. In addition, from my previous social studies classes and information on the SDGs, I had learned that Africa has a high poverty rate and a poorly developed medical system, and upon further investigation, I realized that compared to other countries in the world, Africa's medical system is still underdeveloped. Therefore, I decided to focus my research on medical care in Africa. Also, there is a big difference in the situation between Sub-Saharan Africa and North Africa, even though they are in the same Africa. So, the target region for this study will be "Sub-Saharan Africa," and we will study only places where the situation is as close as possible. Therefore, the research question for this study is: "What mechanisms are needed to provide Sub-Saharan African populations with better health care and longer life expectancy?" The significance of this study lies in the fact that it is possible to increase the average life expectancy in Sub-Saharan Africa.

In the right Figure 2, Sub-Saharan countries have shorter life expectancy. This can be seen in Figure 1, which shows that life expectancy at birth is generally lower in Africa than in other countries. Reasons for the short life expectancy include the lack of an adequate medical system, the high probability of children dying soon after birth, poverty, famine, conflict, and war. Therefore, in this study, I will focus on the "medical system," which will lead to an increase in average life expectancy.

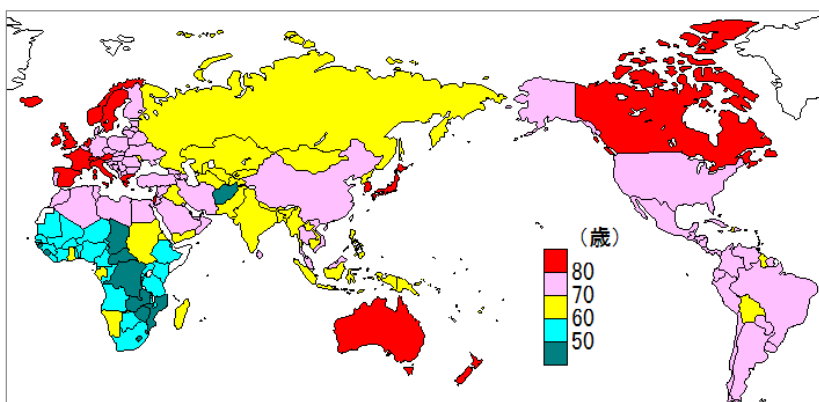


Figure1 Life Expectancy World Map
<https://honkawa2.sakura.ne.jp/index.html>
World Factual Data Catalogue

LIFE EXPECTANCY AT BIRTH: Africa

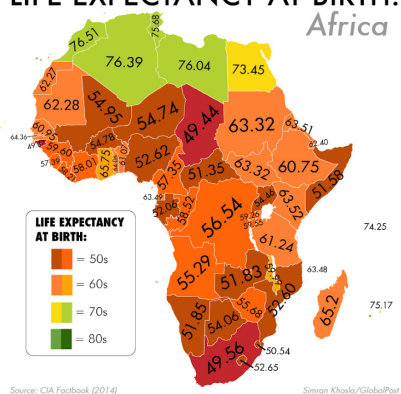


Figure2 LIFE EXPECTANCY AT BIRTH

<http://oxstones.com/>

Oxstones Investment Club™ The New Silk Road

2 Methods

As for research methods, fieldwork in Africa is considered impossible due to COVID-19 and geographical conditions. Therefore, we sent email and interviewed people living in Africa, people who have emigrated to Africa, and proceeded with our study. In addition, the Internet and articles were the main methods used to collect information.

3 Discussion and implications

There are many problems in medicine in Sub-Saharan Africa and I will introduce 3 things.

The first problem is “bad access.” Looking at the data of Figure 3, in a few countries, such as Nigeria and South Africa, the situation of access to hospitals is not bad. For example, in Nigeria, South Africa, and Lake Victoria, hospitals can be reached within 2 hours. However, in most regions, the travel time to the hospital is found to be more than 2 hours. In particular, in less densely populated areas, travel time is even longer. This indicates that access to hospitals is poor.

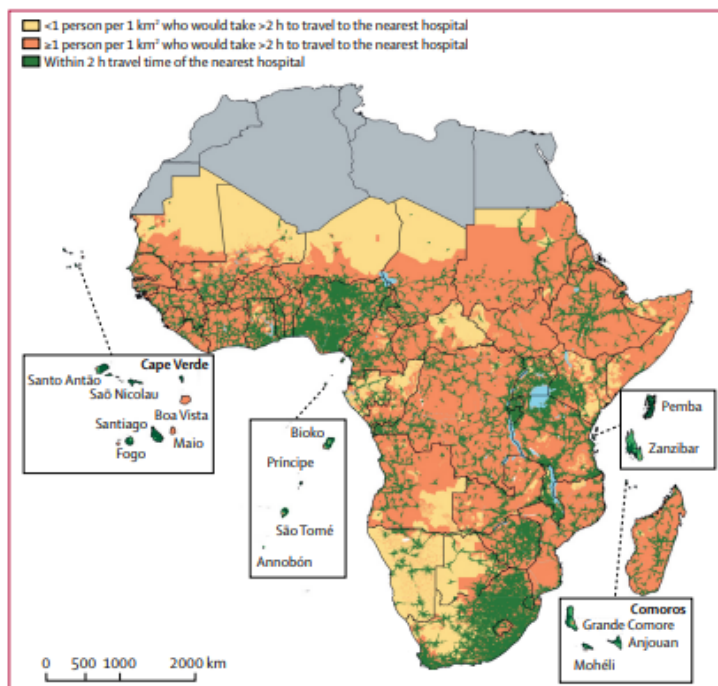


Figure3 Geographical access of the general population to public hospitals (Regions shaded in grey were not included.)

<https://www.thelancet.com/journals/langlo/home>

THE LANCET Global Health

Also, looking at Figure 4, it can be seen that in sub-Saharan Africa, there are fewer hospitals in the more northerly regions and in the interior regions. Thus, there are also regional differences in inaccessibility that need to be improved.

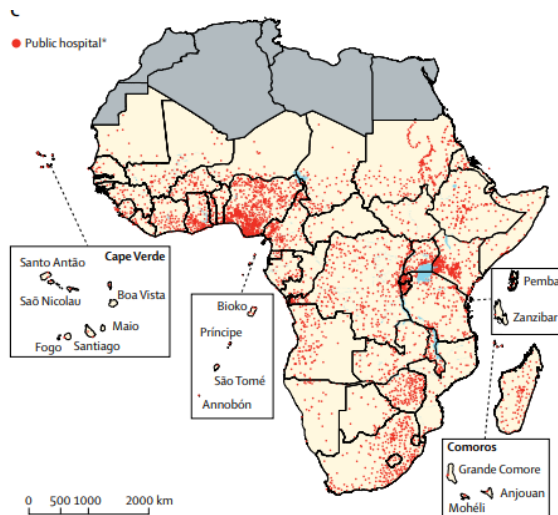


Figure4 locations of public hospitals in sub-Saharan Africa
<https://www.thelancet.com/journals/langlo/home>
 THE LANCET Global Health

The second problem is "infectious diseases." "Three major infectious diseases" are HIV, tuberculosis, and malaria. These infectious diseases are a social problem on a global scale due to the large cost burdens required to combat them. HIV is a disease that lowers the immune system. It is a serious problem because it contributes to the spread of other infectious diseases such as tuberculosis. HIV is often spread through "sexual transmission," "blood-borne infection," and "mother-to-child transmission," and is a major cause of the disease's spread. Malaria is an infectious disease transmitted by the Hamadara mosquito, which contains the parasite Plasmodium falciparum, and if not treated within 24 hours of infection, we can be serious and highly fatal. Tuberculosis is a disease caused by infection with the Mycobacterium tuberculosis and is passed from person to person. When a person with tuberculosis coughs or sneezes, the tubercle bacilli become airborne and are spread by people around the person who breathe in the germs. Figure 5 shows that these infectious diseases are most frequently spread in Africa. In particular, about 70% of the world's HIV cases and 90% of the world's malaria cases are in Africa. This means that while other regions have adequate infection protection programs, Africa does not have enough of them. Thus, it means that the disease is considered to be one that can be adequately prevented. In order to stop the spread of these infectious diseases, it is essential to improve unclean living conditions and, in the

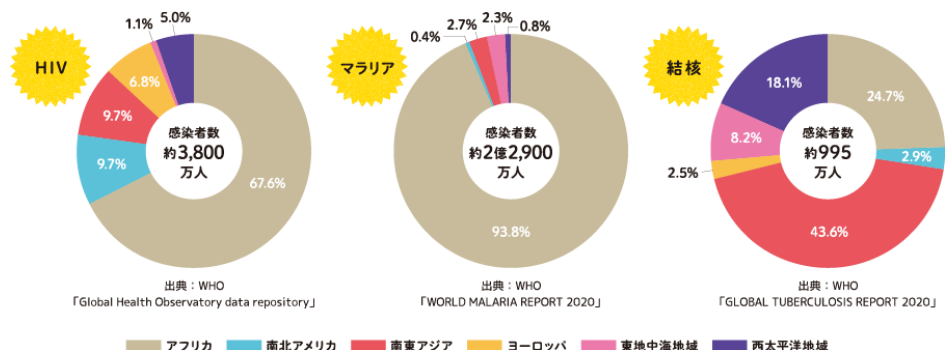


Figure5 Number of cases of the three major infectious diseases percentage by region
https://www.jica.go.jp/aboutoda/find_the_link/index.html
 つながる世界と日本

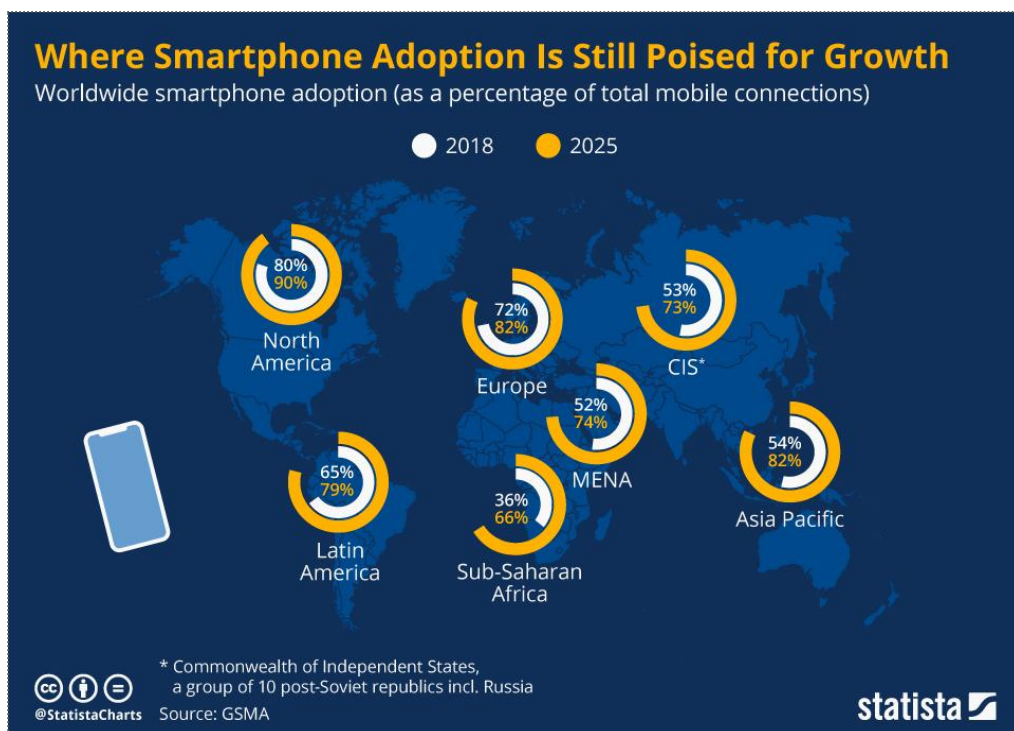
unlikely event of infection, to provide support in terms of medical care, clean water and other forms of personal hygiene, as well as nutritious meals.

The third problem is the current "health care system." In particular, it relates to emergency medical care. There is a difference between public and private medical ambulances. Public ambulances can be reached by calling 10-177 from a fixed-line phone or 112 from a cell phone. Private ambulances can be reached by calling the local emergency center. Public ambulances are open to everyone free of charge, but there are not enough of them, so it is not certain whether they can provide immediate service or not. Private ambulances are charged and cost around 2000 to 3,000 rand, depending on the distance and medical treatment. In Japanese yen, this would cost about 14,000 to 22,000 yen. Since the monthly income in Africa is estimated to be about 100,000-150,000 yen, it is very expensive.

4 Conclusion

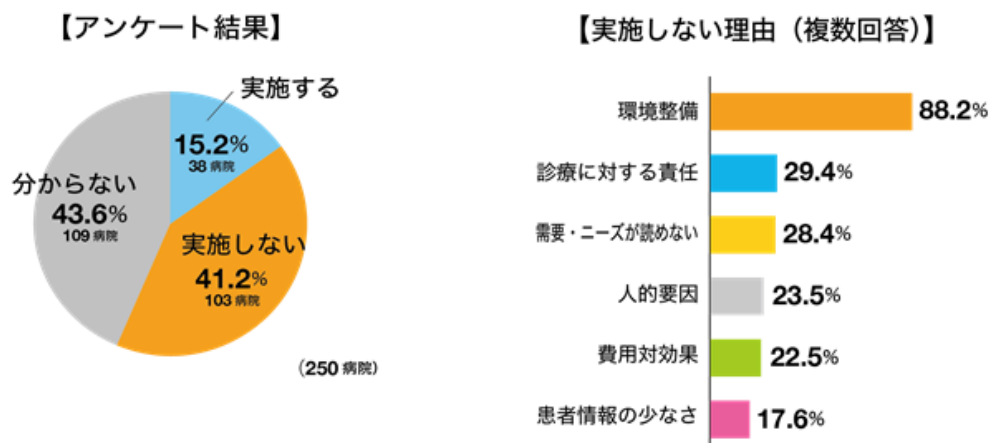
I propose the creation and utilization of a "parallel system of online medical care and transportation services." In the following, I describe the system in detail.

Online medical care has been realized in some areas in Africa due to the impact of the spread of the new coronavirus, and is considered feasible. In addition, Figure 6 shows that the smartphone penetration rate in Africa is expected to reach 66% by 2025, i.e., the smartphone penetration rate will be on the increase. Therefore, we considered that online medical care was feasible enough.



↑Figure6 where smartphone adoption still poised for growth
<https://www.statista.com/>
STATISTA

Let me explain how the system works. There are a few things to note about online medical care. First, online medical care should only be provided after the second visit. This is because the first online visit is more likely to lead to misdiagnosis and medical errors. As a basis for this, please see the results of the questionnaire in Figure 7. This questionnaire was conducted via the web from the day after the emergency economic stimulus package was announced on the 7th to the 11th. The target respondents were hospitals using MDV's management support systems, EVE and Medical Code. As a result of the survey, 15.2% of the respondents answered that they would "implement" online medical services, while 41.2% answered "not implement" and 43.6% answered "don't know." In addition to environmental facilities, another reason for not implementing online medical care is "responsibility for medical care." In other words, it is difficult for respondents to have confidence in the results of their own medical treatment. Therefore, we judged that the first visit by online medical examination might have a high possibility of misdiagnosis. Therefore, we recommend the use of online medical care from the second medical examination onward. These matters were also discussed by the Japanese government at the "Study Group on Review of Guidelines for Appropriate Implementation of Online Medical Treatment" and other meetings. The introduction of online medical care is expected to reduce the financial burden on patients, relieve hospital congestion, and prevent the spread of infectious diseases. It will also make it possible to see a doctor easily. However, there is also the problem of medical disparities caused by regional disparities and differences between rich and poor. In the future, we believe that collaboration with physicians in other countries can lead to a fundamental solution to the shortage of physicians.



↑ **Figure7 About Online Medical Treatment**
<https://www.mdv.co.jp/> MDV



In addition, a system will be developed to enable the use of a transportation service when a patient must go to the hospital for a doctor's decision or for an initial medical examination. For the transportation service, we are considering using Mini buses, which are vehicles used in Africa, as shown in Figure 8. Mini Buses are said to account for 60-70% of public transportation for South Africans. Since MiniBuses made in Japan, such as the one shown in Figure 9, are also used, this service can be operated with support from Japan.

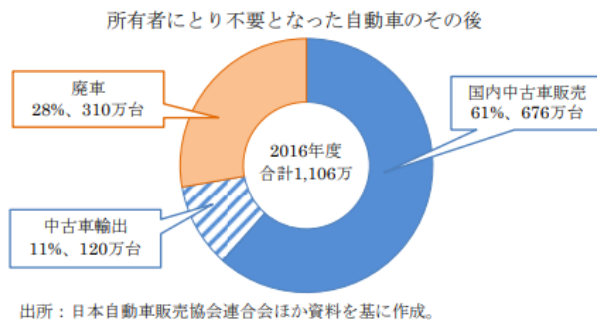


図10 自動車リサイクルの現状(藤井和則)
https://arc.asahi-kasei.co.jp/report/arc_report/pdf/rs-1021.pdf

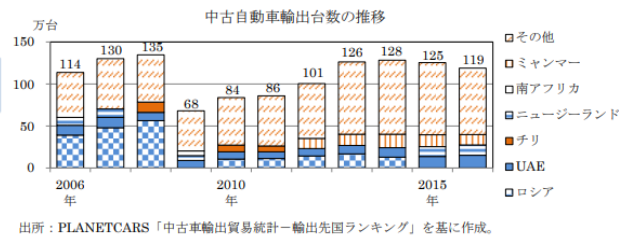


図11 自動車リサイクルの現状(藤井和則)
https://arc.asahi-kasei.co.jp/report/arc_report/pdf/rs-1021.pdf

We also believe that it would be possible to use used or usable discarded vehicles in Japan. Since the annual number of discarded vehicles in Japan is estimated to be about 3.1 million, it would be beneficial to Japan if these vehicles could be utilized. The number of vehicles that are no longer needed by their owners (Figure 10) indicates that 1.2 million used vehicles are exported to Africa each year. This suggests that it is feasible to export and utilize these no-longer-needed vehicles in Africa. Figure 11 shows the movement of these used car exports since 2006, with a significant decrease in 2009 to 680,000 units from 1.35 million units the previous year. Kazunori Fujii writes that this was due to the impact of tariff hikes and other factors in Russia and other major export destination countries. Although the number of used vehicles exported continued to increase thereafter, it peaked at 1.28 million in 2014 and has been slowly declining, reaching 1.19 million units in 2016. This makes it a good thing for Japan to be able to take advantage of used vehicles. The incorporation of a dedicated transportation service for patients is expected to reduce the physical burden on patients and shorten the time required for the service. However, there will be more things to consider, such as determining who will bear the financial burden of the service and the frequency of pickups and drop-offs.

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Research question

What kind of measures are possible to achieve efficient and high-speed logistics in developing?

Currently

, there are many inefficient logistics, especially in developing countries. Specifically, it is transportation that takes many hours to move by land. Trucks have a low transport capacity and emit a large amount of CO₂. Furthermore, there are many unpaved rough roads, and the current situation is that even more CO₂ is emitted. To solve these problems, major companies are working on air transportation using aircraft and helicopters, but because large aircraft cannot land in small villages, most of them do not use small aircraft for piston transportation. Furthermore, they are fuel intensive and therefore not an efficient transportation method. In addition, in order to operate safely and quickly, highly developed facilities are required, and multiple facilities such as runways must be constructed over a wide area. It will take a lot of cost and time, and realistically it will be impossible to solve these problems quickly.

Moreover, in many developing countries, needed supplies often do not arrive quickly, and in times of famine, water shortages, disasters and epidemics, the arrival of relief supplies can be significantly delayed. These problems have been pointed out for a long time, but effective solutions have not yet been found.

For people in developing countries, the realization of safe and low-cost logistics is extremely important for future development and a rise in daily living standards.

Research

First, we considered the current state of drone transportation. There are many types of drones, from large to small. A large one can take off with a weight of 16 tons. On the other hand, there are small devices that are small enough to fit in the palm of your hand. In general, the bigger the drone, the more cargo it can carry and the longer it can fly. However, on the other hand, large drones require a lot of time and large-scale equipment for takeoff, landing, and maintenance. A small drone can be easily operated, but the weight that can be carried and the distance that it can fly are short.

That's why I came up with the idea of a cluster logistics system. This is a method in which multiple medium-sized and small-sized drones are mounted on a large aircraft and separated at each point. It's the same principle as cluster bombs.

The parcels to be delivered are divided for each remote village and loaded onto small drones. This drone is mounted directly on a larger aircraft or drone. Detach a small drone over the destination, and the small drone will carry the cargo to the destination village. Small drones that have finished carrying cargo can be collected by large drones and returned to

the base. This way, you can land easily in small villages while still taking advantage of the long range of the larger aircraft. It can be efficiently transported even in developing countries where roads and air facilities are underdeveloped.

In order to improve this system, we thought about transportation using military drones. At this time, I thought about how to utilize military drones that have already reached retirement. The benefits of using military drones are many.

First, military drones are often equipped with bomb bays called hardpoints. Originally designed to carry missiles and bombs, it is useful for carrying small child drones when converted to civilian use. In addition, many bombs and missiles are heavy, so the payload (carrying capacity) of military drones is basically high. This allows a single aircraft to carry more goods at once.

Additionally, military drones come in a variety of sizes to suit their purpose. They range from large, high-flying drones to very cheap, small drones used for reconnaissance in ground warfare. Therefore, various sizes are available for cluster transport.

Finally, it can fly stably even over long distances, and because it is unmanned, it can operate in a small space. No runways or large helipads are required. Many small drones can land even on the eaves of private houses, and in some cases, there are also aircraft that can hover just above the ground and drop only supplies.

A major problem with older military drones was their vulnerability to radar detection and lack of stealth. But even that is an advantage for civilian use. Drones, which are commercial aircraft, do not need to be stealthy, and it is safer if they are always visible on radar. It prevents unexpected approach and contact with other aircraft, and can be easily tracked and identified in the unlikely event of a crash.

Based on these many advantages of drones, we thought that we could easily build a logistics system at a lower price.

However, the biggest problem that emerges here is the cost of operation and securing pilots. As for the pilot, I want to solve it with automatic flight. Currently, all U.S. Air Force drones are operated remotely by humans. In other words, they need skilled pilots in remote locations. But this is not because automatic flight is impossible. Humans are in control to use weapons and make decisions to kill targets. In other words, it can be said that automatic flight is possible if it is a transportation business that does not use weapons.

In terms of cost, we are considering using old-fashioned aircraft that have been sold to the private sector, and using unmanned and automated operations to reduce costs. In addition, we would like to secure the necessary funds by means such as collecting advertising expenses by posting the company's advertising logo on the surface of the aircraft.

These systems efficiently carry out logistics, which are the foundation of development. It will be a great force for the efficient development and development of developing countries.

Paper

<https://koreascience.kr/article/JAKO201609633504636.page>

1. Summary of Research

In my fourth year of study, I researched methods to eliminate poverty, but I was unable to propose specific solutions because I focused my research on all poor countries. Therefore, I decided to focus my fifth-year research on sub-Saharan Africa, the region with the worst poverty. Sub-Saharan Africa is the region south of the Sahara Desert, consisting of a total of 49 countries, excluding Egypt, Sudan, Libya, Tunisia, Algeria, Morocco, and Mauritania. In Sub-Saharan Africa, 41% of the total population, or 410 million people, live on a dollar a day, and 18 of the 49 Sub-Saharan countries are considered to be in a state of famine. There are three main reasons for this state of poverty in Sub-Saharan Africa.

The first reason is that there are many countries in conflict. In Sub-Saharan Africa, conflicts are constantly occurring due to slavery and ethnic issues. Since there are 20 countries in Sub-Saharan Africa that have never experienced conflict or coups d'état, 29 out of 49 countries are already experiencing conflict. Conflicts lead to poverty because many people are lost, many facilities necessary for life are destroyed, and the necessities of life are no longer available.

The second reason is Russia's invasion of Ukraine. Russia's invasion of Ukraine has caused primary commodities such as food and oil to skyrocket significantly. The rising prices of fuel and food lead to higher inflation rates, which in turn leads to increased poverty. In addition, since President Putin is planning to bring the war with Ukraine into a war of attrition, and taking this into account, the war between Russia and Ukraine is likely to continue for a long time, so the prices of primary commodities will continue to soar, and poverty will continue to grow.

The third reason is the decrease in remittances to home countries by migrant workers due to soaring prices caused by the pandemic of the new coronavirus and Russia's invasion of Ukraine. Since many families in poor countries depend on remittances from migrant workers, a decrease in remittances from migrant workers would further exacerbate poverty.

For these reasons, the most effective way to solve poverty in sub-Saharan Africa is to raise a lot of money and donate it to sub-Saharan Africa. So, how can we raise funds from many people? In order to get a lot of people to donate money, it is necessary to let people around the world know about the current situation in Sub-Saharan Africa. Therefore, by making a short film about the current situation and future of Sub-Saharan Africa, sharing it with the world, and collecting donations through it, we can let many people know about the current situation and future of Sub-Saharan Africa and collect donations from many people.

2. Motivation for the research

When I was in the fourth grade, I did research on how to solve poverty, but I could not propose a concrete method because the scope of the research was too broad. Therefore, this time, I decided to focus on Sub-Saharan Africa, the region with the worst poverty in the world, and to research what concrete measures can be taken to solve poverty in Sub-Saharan Africa.

3. Research Findings

Of the 49 countries in Sub-Saharan Africa, 18 are in a state of hunger, and about 41% of all Sub-Saharan residents live on about one dollar a day.

There are two main causes of poverty in Sub-Saharan Africa

(1) Because 29 of the 49 countries in Sub-Saharan Africa have already experienced conflict.

When conflicts occur, many people are lost, and facilities and goods necessary for daily life are destroyed or stolen, which leads to the expansion of poverty.

(2) The invasion of Ukraine by Russia has caused primary commodity prices to skyrocket.

(iii) The price of fuel and food would soar, which would lead to higher inflation and increased poverty.

(2) Since Russia is trying to make this war an enduring war, the war is expected to last for a long time, and the prices of primary commodities are expected to continue to rise.

(3) Decreased income due to the new coronavirus will reduce remittances from migrant workers.

(4) Many families in impoverished countries rely on remittances from overseas migrant workers, and if remittances decrease, poverty will increase.

There is a method called "crowd-funding" to raise funds from a large number of people. Crowdfunding is a system that started in the U.S. in the early 2000s. Its main purpose is to collect funds from an unspecified number of people by publicizing on the Internet the dream that one wants to realize and getting many people to agree to it. There are many examples of crowdfunding projects around the world. For example, crowdfunding for the 2011 Tohoku earthquake and tsunami raised an average of about 1 million yen.

Another benefit of crowdfunding is that the activity itself can be used for promotion. The more people know about your project through crowdfunding, the more visibility you will gain, and in turn, the more customers you will get.

However, there are some disadvantages to crowdfunding: First, it takes time and effort. Second, crowdfunding is not a simple process. There is a possibility that your idea will be stolen.

Based on the above points, we decided that using crowdfunding as a way to raise funds to alleviate poverty would be effective. Crowdfunding can raise funds from many people around the world, and it can also be used for promotion and to raise funds from more people around the world.

However, since poverty is a problem that has not been solved despite the many measures that have been taken to date, only a few people will give money to a fund-raising campaign that claims to collect funds to solve the poverty problem. Therefore, it is more effective to propose a new way to solve the poverty problem and call for investment of funds for it.

I propose to use crowdfunding to raise funds to make a film about the current situation and future of poor countries, using poor countries as locations, so that many people can learn about the current situation and future problems of poor countries, and more people who are affected by the film can raise funds to help poor countries get out of poverty. This is a way to raise funds to help poor countries get out of poverty.

There are three benefits to be gained by doing this

(1) Because a concrete method of making a film about poverty is provided, more people will participate in the crowdfunding campaign than if we just blindly call for donations.

(2) By actually using poor countries as filming locations, funds will be available to poor countries when the film is released.

(iii) Since the film can be seen by many people around the world, many people can learn about the current situation and future problems of poor countries and many people can be affected, which will encourage more people to donate.

However, as mentioned above, crowdfunding has disadvantages such as "it takes time and effort, and there is a possibility of not reaching the target amount" and "there is a possibility of ideas being stolen. However, when crowdfunding is actually used to raise funds for the creation of a film, the average amount of funds raised is more than one million yen. As for the problem of ideas being stolen, since my ultimate goal is to provide funds to poor countries and not for my own benefit, I have no problem with ideas being stolen.

Therefore, I would like to raise funds through crowdfunding to make a film about the current situation and future of poor countries, using poor countries as locations, so that many people can learn about the current situation and future problems of poor countries, and more people who are affected by the film will donate to help poor countries get out of poverty. The film will be made in the impoverished countries in the region.

Transition from monoculture to polyculture

Improving food self-sufficiency in the Republic of Ghana

5305 Taito Ohtaki

Research Summary

Last year I did research on the possibility of increasing crop production by farming in deserts. While researching agriculture in deserts, I became interested in the "monoculture economy" that is a problem in many developing countries which are in desert regions. The monoculture economy has led to a low rate of food self-sufficiency and poverty. Therefore, I thought to elucidate whether the food self-sufficiency rate of developing countries can be increased and poverty can be solved by shifting from a monoculture economy, which means single cultivation, to a polyculture economy, which means multi cultivation. For this purpose, I conducted this study with the aim of efficiently cultivating plants in desert areas where it is difficult to grow plants. In this study, I aimed to recover from the monoculture economy in the Republic of Ghana. If recovery from the monoculture economy is achieved in the Republic of Ghana, I plan to apply this research to other countries and regions in the future.

1 Introduction

I am interested in agriculture, and I have been doing research activities with agriculture as a major theme since last year. In the year before last, I conducted research aiming to revitalize Japanese agriculture by conducting 6th industry, and I found out that it is possible to increase profits and promote local production for local consumption by conducting 6th industry, although it requires more knowledge and skills. Last year's research showed that mass production of crops is possible in desert areas through the use of institutional agriculture, however the research ended without any conclusions on how to build agricultural facilities in desert areas, the costs involved in introducing such facilities, or how to operate them. This year, I decided to research the "monoculture economy," which I was interested in during my Internet based literature search in the previous year's research. A monoculture economy is an economy in which the industrial structure of a country specializes in the production for export of a couple of agricultural products or mineral resources, and is also called monoculture. This economic system can be seen in many developing countries, where domestically produced crops and mineral resources are exported as commodities. Since the theme of this research is agriculture, I focused on the monoculture

economy in agriculture. The method of the research is to conduct experiments to deepen the previous year's research, and also to prepare a proposal based on the advantages and problems that will arise when shifting to a polyculture economy in a country such as the Republic of Ghana where a monoculture economy is a problem.

2 Main Discussion

This research was based around two main ideas: firstly, to investigate through experimentation better ways of using fertilizers to grow crops efficiently in non-agricultural areas such as deserts, and secondly, to develop a proposal that takes into account the benefits and problems of shifting from the monoculture economy found in developing countries to a new form of economy known as a polyculture economy.

In the first experiment about better use of fertilizers to grow crops efficiently in the first agricultural area, I investigated the efficient use of advanced chemical fertilizers in fertilizer-free soil using vermiculite. The process of the experiment was as follows. First, “komatsuna” was grown in pots using vermiculite, which does not contain nutrients in the same way as desert sand. Eight pots were prepared in which eight seeds were sown, and two each were compared into four groups, A, B, C, and D. Then, after 20 days, comparing the differences in the growth of each group.

A: 10 days after sowing, apply advanced compound fertilizer.

B: Apply advanced compound fertilizer only at sowing time.

C: Apply advanced compound fertilizer at sowing and 10 days after sowing.

D: Do not feed with highly chemical fertilizers

Before the experiment, I expected that the “komatsuna” plants in pot C would grow the most leaves and roots because they would get more nutrients at the time both when sowing C and 10 days after sowing. The result of the experiment was that we could not get enough data. The germination rate of komatsuna was not good due to many bad weather days this year, and we could not get enough germination data. Therefore, we decided to consider using the data of the similar experiment conducted in the year before last. In the year before last, the experiment was carried out to know the difference of the growth of the plants by the use of fertilizers using lettuce. The procedure of the experiment was the same as this year's experiment, but we used different colored pots for each group to make it easier to distinguish between the different groups. Therefore, the data presented here are not correct. The results of the experiment of the year before last are as follows (Table 1).

	A1	A2	B1	B2	C1	C2	D1	D2
germination rate	94%.	88%.	88%.	100%.	88%.	81%.	94%.	100%.
above the soil	3.1cm	2.8cm	2.7cm	2.3cm	2.7cm	2.7cm	2.0cm	2.0cm
under the soil	4.0cm	5.5cm	4.4cm	5.3cm	5.6cm	6.0cm	8.0cm	8.8cm

(Table 1) Results of last year's experiment

From the experiments, I got several results. In Group A, the area above the soil grew more than the others, but the area below the soil did not. In Group D, the area above the soil did not grow more than the others, but the area below the soil did grow more than the others. The reason why the germination rate did not differ much among the groups is that plants do not need external nutrients for germination, but use internal nutrients of the seed for germination. The reason for this result in Group A was that the soil in the pot contained sufficient nutrients, so the absorbed nutrients were used for the growth of stems and leaves rather than for the growth of roots. The reason for this result in Group D was that the soil in the pot did not contain any nutrients, so the roots grew more to increase the surface area of the roots in order to absorb nutrients from the roots more efficiently.

The second is to develop a proposal for the transition from a monoculture economy to a new economic form, a polyculture economy, in the Republic of Ghana. First, the current state of agriculture and economy in the Republic of Ghana is a monoculture economy typical of the cocoa bean, with agriculture accounting for about 20% of gross domestic product and about half of employment. Which has the disadvantage of making the economy unstable, however the cultivation and export of cacao beans are easily affected by international markets and weather conditions, One of the factors that led to the country's monoculture economy is the rapid spread of cacao bean cultivation, which was brought to the country when it was a British colony in the past, and in 1911 it became the world's largest producer of cacao beans.

The advantage of a monoculture economy is that it is superior to other countries in the technology and production of that particular crop because it grows a small number of different crops. The disadvantages are that crop prices are affected by the weather and

international markets, and that it is difficult to improve a country's food self-sufficiency because most of the crops produced are commodity crops and are exported. The advantages of a polyculture economy are that it grows a large number of crops, so that when prices of some crops fall due to weather or international markets, it can be compensated with other crops, and it can increase its own consumption in addition to exports. On the other hand, the disadvantages are that the export volume of each crop is reduced and that a wide range of technology and a large amount of labor are required. The advantages of moving from a monoculture economy to a polyculture economy are that it allows a country to increase its own food self-sufficiency and to respond more easily to weather and international market downturns. The disadvantages are that the amount and production of certain crops that have been grown in the past will decrease, and that a lot of new knowledge and policies and systems will need to be developed in order to produce new crops in the region.

3 Conclusion

The purpose of this study was to make a proposal for the transition from a monoculture economy to a polyculture economy in the Republic of Ghana. The experimentation conducted to provide the basis for the proposal suggests that the efficient way of using use of chemical fertilizer for crop production in non-agricultural areas is to first increase the efficiency of nutrient absorption by allowing the roots to grow and then adding chemical fertilizer to the soil to make the whole plant grow bigger. However, if it is done as open field farming, the nutrients and water will permeate into the ground and the effect of the scientific fertilizer will be reduced, so facility farming can be used to provide nutrients and water more efficiently.

The proposal to shift from a monoculture economy to a polyculture economy in Ghana has the advantages of increasing the country's food self-sufficiency and of being able to adapt easily to weather and international market deterioration. The disadvantages of reducing the amount of certain crops grown and the amount of production, requiring a lot of new knowledge, and requiring the development of policies and systems to produce new crops on the land. The disadvantages are that it requires a lot of new knowledge, and that it requires the development of new policies and systems to produce new crops on the land. The point that new technology and workers will be needed will be solved by creating a system to dispatch engineers. As for research issues, they conducted experiments using advanced chemical fertilizers in their experiments, but they will conduct similar experiments using organic fertilizers in consideration of cost and safety. The experiment conducted in the

previous year ended when the plants had not fully grown, so I will investigate whether they can grow to their maximum size over a longer period of time, and whether there is any difference in the size and quantity of the fruits they produce.

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The world's medical field

Communication helps nurses

15term student 5 class 6 Taimu Kasakura

Abstract

I studied the theme “The world's medical field”~Communication helps nurses~. I set this theme to examine the current medical field because I am interested in the medical field. I found that there are a lot of problems. The aim of this research is to reduce nurse's burden due to the labor shortage. At first, I examined the transition of the number of current nurses. The number of new nurses is increasing. In more investigation, we found that the nursing profession has a larger retirement rate than other professions. Therefore, instead of increasing the number of new nurses, we decided to reduce the retirement rate of nurses. To this end, we decided to decrease the retirement rate of nurses by increasing job satisfaction for nurses. We also considered that the most rewarding part of a nurse's job is being appreciated, so we wanted to increase the number of opportunities for nurses to be appreciated. To improve such opportunities, we propose a communication tool. However, there are some disadvantages that arise from installing communication tools in hospitals. Examples include the cost to the hospital and the increased burden on the nurses who have to inspect the communication tools. To solve these problems, we decided that the installation should be low-cost and simple in structure.

1 Introduction

I chose this theme for two main reasons. The first is that I have always been interested in medical care. Therefore, I wanted to investigate the medical field. The second reason is that one day I was watching the news and learned that there are problems in the medical field, so I decided to look into it in detail. And the purpose of this research is to reduce the burden on nurses, who are currently experiencing a shortage. The significance of this research is that by decreasing the burden on nurses, it is expected that the quality of medical care will improve more than it is now. To conduct the research, we will first use the Internet and books to find

information about the current medical field and nurses, as well as previous research. Next, we will organize this information, narrow it down to a single problem that nurses are currently facing, and conduct further research on that problem. Then, based on the information they have gathered, they will come up with their own suggestions on how to solve the problems faced by the nurses, using the previous research as a reference. After that, I will consider the advantages and disadvantages of the proposal and modify the proposal based on them.

2 Discussion and implication

First, with regard to the shortage of nurses, the problem to be solved in this study, it is no exaggeration to say that nurses are in short supply worldwide, as the human resource needs of nurses are increasing due to the ongoing aging of the population and the effects of the new coronavirus and other factors. Secondly, the number of new nurses is increasing every year. From this fact, I focused on the retirement rate of nurses. In my research, I found that nurses tend to have a higher retirement rate than most other professions. There are two main reasons cited for this. The first is the contents of nursing work. In addition to the physically demanding work of carrying patients and carrying equipment necessary for medical care, nurses' jobs are also mentally demanding, because their work directly affects the lives of patients, and so the resignation rate tends to be higher. The second reason is that many of them are women. The nursing profession is inevitably dominated by women. Because of this, many of them leave the field for long periods of time due to maternity or childcare leave. This makes them difficult, making it difficult for them to return to work again, and many of them end up retiring. Therefore, I decided to focus my research on the first reason. Many countries provide support for nurses to return to the field, and the systems for nurses differ from country to country, so I decided to research the first job description. However, if the work of nurses is reduced, the quality of medical care will decline. So I decided to increase the job satisfaction of nurses. In this research, I will also assume that the most rewarding part of nurses' work is communication with patients. Therefore, I will propose a communication tool. However, the problems with this communication tool are that it will increase the workload of nurses and that it will inevitably be costly to implement. Therefore, the necessary elements of a communication tool should be as simple as possible, not too complicated, and low-cost. The reason for this is that many elderly people live in hospitals,

and if the system is too complicated, patients will not be able to use the communication tool. We also thought that a simple system would reduce the workload of nurses. In addition, the cost of medical care in hospitals is very high, so this communication tool needs to be low-cost in order to be adopted.

3 Conclusion

The study focused on decreasing the number of nurses who retire, rather than adding new nurses to the nursing workforce. Many of the reasons why nurses were leaving were due to the heavy workload both physically and mentally. However, we cannot reduce the quantity of nurses' work because patients' lives are at stake if the quality of nurses' work is reduced. Therefore, we tried to increase the job satisfaction of nurses and reduce the number of nurses who retire. And here, we propose the creation of a communication tool and its implementation in hospitals to facilitate communication with patients as the job satisfaction of nurses is communication with patients. In addition, the hospital cannot spend much money on this communication tool due to the high cost of medical supplies, so this communication tool needs to be low-cost.

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Support for TCKs

～Providing a Better Education With VR•AR Technologies～

5307 Moe Kamoda

Abstract

Around the world, there are many children who are educated in a country where their native language is not spoken. These children are called TCKs, which stands for Third Culture Kids. These include refugees, and children of international couples and international workers. In the global society, the needs for TCKs vary among each child, but not many of them could get the right support. Lack of money and language teachers are a big problem throughout the world. Being able to solve these problems and support TCKs will lead to a friendlier world for not only adults, but also for children who are forced to go abroad regardless of their will. It will also promote young people to go abroad and will lead to a more global world with less language and cultural problems. One way to solve this problem is by using VR•AR technology. If TCKs can get a VR headset, they can use it to take virtual language lessons from home, and also use it as a translator in school. In addition, by using an application, they can interact with other TCKs as an avatar, which will lead to mental comfortability.

1. Introduction

Many of the TCKs have difficulty with the language, culture and identity. Some even stop going to school or suffer from mental diseases. Despite their hardships, the support for TCKs is not enough, and a lot of TCKs around the world are going to school without any language support. The reason for the lack of support is that it is financially difficult to assign a teacher for every TCK student that is scattered all over the world. It is necessary to increase the number of TCKs who could receive enough support.

Also, because parents don't want their children to have a hard time, some parents decide to leave their family in their home country and move alone, when given the order of moving from their company. Therefore, lack of support for TCKs are also forcing families to be separated, and are making it difficult for children to go abroad with less worries.

According to the World Family Bilingual Science Laboratory, when elementary school children learned a foreign language using VR, their attitudes toward learning improved significantly and led to positive learning outcomes. Also, it was found that three categories - social, motivational, and multisensory and movement - can serve as the basis for successful

foreign language learning using VR. In another study conducted by the University of Texas in collaboration with the University of Córdoba, more than half of the teachers reported that their students' motivation increased when using VR technology. These studies indicate that using VR for language education may be effective. However, VR language education has never been used in practice. This research is based on these study results.

This study will investigate support methods that TCKs can receive at school or at home without teachers. In addition, I would like to think about support for improving TCKs' native language and making connections among TCKs, too. To conduct this study, I will research what kind of problems occur when students do not understand the language used at school and to what extent. I estimate that VR technology will be an effective way to support TCKs without the need of teachers, so this research will investigate VR technology, language education on VR, and the use of VR in schools. The research question is what are the ways to support TCKs with less money and teachers by using VR and AR technologies?

2. Discussion and Implication

TCK stands for "Third Culture Kids," and returnee children, overseas children, foreign children, and refugees are referred to as TCKs. They are called "Third Culture Kids" because they have three cultures, one from their home country, one from the country where they live or lived, and the mix of the two countries as a part of their identity. Some TCKs may live in more than one foreign country. In this case, they have more than three cultures. Worldwide, it is said that the biggest problem TCKs face is that they have no place to feel at home. They often struggle with their identity because they do not know where their home country is or what language they could speak the best, and they are treated like foreigners wherever they go. Apart from these psychological problems, there is also the problem of language. They cannot understand the language used in school and cannot understand classes. Some forget their native language because they have been living away from their home country for a long period of time. Once these children go back to their home country, they struggle not being able to understand classes and cultures of their home country.

<Current situation in each country>

In Japan, as of 2008, there are 40,485 foreign students and 10,274 Japanese nationality students who need Japanese language instruction. Those who need Japanese language instruction but cannot receive support are called language refugees. Language refugees are unable to understand classes in school, so they are unable to learn what they would have been

able to understand if they had stayed in their home country and were taught in their native language. It may cause them to give up on their future dreams and university education. In addition, most language refugee children are those who have been forced to go abroad against their will due to their parents' work, divorce, or migrant work. In particular, single parents or parents who came to Japan in search of work do not have the financial ability to get support such as going to cram school. These language refugee children account for as many as 20% of those who need Japanese language instruction. While the dropout rate of all Japanese high school students in the 2008 school year was 1.3%, 9.6% of high school students in need of Japanese-language instruction dropped out, showing that the lack of support gives a bad influence to their education.

In Japan, some schools provide language support for foreign children. For example, they offer language classes after school, assign Japanese language teachers at school, or have someone who can speak both the student's native language and Japanese online as an interpreter. Recently, there are also school-specific translation machines that can be used for the language used at school. These translation machines can be used when teachers and parents meet with each other or when children attend classes at school. In addition, 70% to 80% of the students in night junior high schools are foreigners, and many foreign students study with the goal of passing the junior high school graduation examination. Since junior high school is not compulsory education for foreign students, if they drop out of junior high school for various reasons, they have to take the junior high school graduation examination when they want to take the high school entrance examination. However, once they drop out of junior high school, it is difficult for them to enter again. Therefore, night junior high schools play an important role for such children. In other cases, NPOs and volunteers provide Japanese language support. At an NPO called "Kodomo Nihongo Kyoshitsu, Mirai Juku" (Children's Japanese Language Class, Future School) in Isesaki City, which I visited as part of this research, every Saturday, students can get help learning Japanese and doing their homework by volunteers. This volunteer group and the school share information about the students. There is good cooperation between the school, the NPO, and the volunteer community members. This group also cooperates with another NPO, G Community, which provides educational consultation for foreign children over the phone. In this way, the entire community and various organizations were cooperating with each other, showing that Isesaki City has a solid system in place. However, I also felt that Isesaki City's activities are not perfect, and that there is a shortage of volunteers, and that many of the volunteers are around 70 years old, which means that they are aging and lack knowledge of online classes. In

addition, most of the areas where such efforts are being made have many foreign children living, and in fact, Isesaki City has the largest population of foreigners in Gunma Prefecture, with 12,622 foreigners.

In the U.S, many schools have an English as a Second Language (ESL) program. In this program, students whose native language is not English and who fall below a certain English proficiency standard are taken out of their regular classes for about an hour a day to be taught by a specialized teacher during art, music, science experiments, or other times when they do not have to attend class and will not fall behind significantly in their studies. However, the ratio of ESL teachers to ESL students is 1:150 in the U.S., indicating that there is a shortage of teachers.

In the UK, there is a system called EAL (English as an Additional Language), where a specialist teacher provides language and life support. EAL classes are held during the time when other students are learning a foreign language such as Spanish or French, so it does not affect other subjects. The classes are kept as small as possible so that students can talk about any hardships or problems that they may have. It is expected to take about 6 years to be able to keep up with schoolwork, and EAL is mainly for children who have grown up without English at home and for children from other countries where English is not the first language.

In Scotland, the government provides grants to schools to help refugees, young carers and students with learning difficulties. Part of the money is spent on EAL students. Many other countries are facing costs and teacher shortages.

<The Importance of the Mother Tongue>

In addition to learning the local language, it is also important to remember the native language and to learn the culture of their home country. This is because the mother tongue is very important for language formation. It is said that the most important period of mother tongue formation is from infancy to the second grade of elementary school. It is said that if a child is separated from his/her mother tongue during this period, it will affect the formation of his/her native language. Since the mother tongue is the basis for thinking and expression, some studies suggest that it is difficult to learn a foreign language if the mother tongue is not established. In fact, there are children who are double-limited, meaning that they have difficulties in both their native language and a foreign language.

(↓From the NPO "Youth Independence Support Center")

"The elementary school she attended did not have a Japanese language support system. She was able to speak Japanese to some extent, but the Japanese she used for studying was difficult to read and write, and she soon began to fall behind her friends. In the upper grades, she could no longer understand most of what she heard in class and stopped going to school. Perhaps because he spent less and less time using Japanese in his daily life, his daily conversations became more and more difficult, making it even harder for him to go to school. Her Japanese was so "broken" that it was hard to believe that she had attended school in Japan for six years. She spun words and short sentences in broken bursts, but when she was in a bad mood, her Japanese often became so disjointed that she had no idea what she was trying to say. The Spanish he used to converse with his mother in the home helped him develop his "speaking" skills, but he was not far behind a first grader in his native country, and he could hardly read or write."

This situation, in which both the local language and native language skills are not developed to an age-appropriate level, is called "double limited," in contrast to "bilingual." When a child falls into a double-limited situation, he or she is unable to think or speak in either language at a high level and has difficulty expressing himself or herself. At the "Kodomo Nihongo Kyoshitsu Mirai Juku," a Brazilian boy who says Japanese is the easiest language for him to understand speaks Spanish with his parents and speaks Japanese at school. Even though Japanese is the easiest language for him to understand, he could not understand sentences in math problems. Even if he can do math calculations, he cannot solve the problem because of lack of language ability. However, the boy cannot write or read Spanish either because he only speaks it with his family.

<Difficulties outside of learning>

There are also children who are mentally hurt by the attitudes of the people around them. "Even for children with roots overseas who were born and raised in Japan, have never been outside of Japan, and speak only Japanese, the color of their skin, names, and the fact that their parents are foreigners make them the target of bullying and discrimination in school life, and many children find it difficult to live. There is a widespread perception among Brazilians in Japan that they will be bullied if they send their children to Japanese schools, and some children do not go to school in the first place because of this. If they make a slight mistake in Japanese, they are called 'stupid'. If they complain about something, they are told to 'go back to your country'. Being told that their skin color is 'dirty' is a common experience for many

children of foreign origin in Japan, and during adolescence, they struggle to establish their identity. For such children, a place -such as a Japanese language class- where they can gather with other 'minorities' in the same situation is the only place where they can feel safe and meet others who share the same feelings. Some students in the language school say, 'I didn't have any friends at school, but when I come here, I feel like we are all the same.' However, the number of children who have access to such support institutions is limited, and there are cases where children are not attending school and are withdrawn at home because there is no support at school or in the community."

("" in parentheses are quotes.)

Therefore, many children suffer not only in terms of language and learning, but also, as a minority, from a lack of understanding of the people around them. This causes them to stop going to school and makes their parents not let them go to school.

<Support to remote areas>

In Japan, there are currently some measures to support remote areas where there are few foreigners in the community, such as online Japanese language classes or using a translation machine to help students go to school. At the NPO volunteer group in Isesaki, volunteers are learning how to use ZOOM so that they can provide support to children in remote areas from 2022. However, there are limitations in giving online classes to children who have not been in Japan for very long and cannot speak Japanese at all. In addition, remote classes lack the mental support of talking with other children in the same situation, compared to face-to-face classes.

Therefore, it is clear that the local language support, native language support, and mental support are necessary, and that it is necessary to make this possible even in areas where there are few people who need support.

<Education using VR and AR technologies>

According to the study by the World Family Bilingual Science Laboratory, when elementary school children used VR in their language learning, their attitude toward the class greatly improved, and was effective for better understanding. Also, it was found that three categories - social, motivational, and multisensory and movement - can serve as the basis for successful foreign language learning using VR. In another study conducted by the University of Texas in collaboration with the University of Córdoba, more than half of the teachers reported that their students' motivation increased when using VR technology. Based on these

studies, it became clear that using VR in language education is effective. However, there are no schools where they use VR goggles in ESL or EAL classes as a daily basis. However, there are schools where they use VR technologies in science and social studies classes. Class VR is a company that makes VR goggles to use in school. Many schools in the U.S. and the U.K. use this company's goggles in school. Also, there is an application called Immerse, which is a VR application for adults to use to learn a foreign language. In the application, they can take language classes as an avatar, practice talking like they are really in the situation, and communicate with other students. Because they use VR goggles and hand controllers, it enables them to learn like they are really in the classroom, and talk like they are really face-to-face. This application is developing now, and it is only used to learn Spanish, but they will make French, English, and Japanese in the future. The cost of Immerse is 45 dollars a month. With this money, students can take language classes 12 times, get personal feedback, and talking between students is allowed anytime. In addition to the 45 dollars, students need to buy a VR goggle.

3. Conclusion

There are many problems surrounding the support for TCKs. First of all, there is a shortage of language teachers and funding at schools, especially in areas where there are not a lot of TCKs. In addition, even in areas where there are language teachers and enough money to support them, a different problem occurs, such as the fact that they have to get out of their main classes to take language classes which will make the students even harder to catch up in their studies, and which sometimes lead to bullying. Also, the support for their mental problems and their native language are lacking, too. It is necessary to find a way to support TCKs with less teachers and money, and provide an opportunity for TCKs to interact and share their experiences and hardships. In addition, the support should be available to TCKs in all areas. Therefore, I thought it would be a good idea to create an application similar to Immerse. With this idea, students could enter Immerse from home, take language classes as an avatar, and practice speaking the language. They can also learn their native language in the same way. Furthermore, by making a TCK community in the application, they can interact with each other and share their hardships and experiences. By making a community with TCKs of the same home country, they can also practice having a conversation in their native language. To do this, VR goggles need to be delivered to each TCKs. The cost is high and it would be difficult for each child to purchase one, so it would be provided to them from

cloud-funding or from the government. It might be a burden on the government, but compared to placing language teachers for each TCK scattered around the world, it will be a small cost. Also, by using the VR headset, they can also use a function of a translator and a function which displays text about the things seen through the goggles. TCKs can use these functions in schools, too, which might help them understand classes and talk to their classmates. Next, I would like to consider how to deliver the VR goggles to TCKs scattered around the world with low or no cost, and how to let them know about the support. Also, mental support in this idea only gives the TCKs the opportunity to find a friend in the same situation, and does not solve the problem of bullying and lack of understanding by others, so I would like to think about how to spread understanding about the TCKs to the world.

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Health and Meal

—The effect of breakfast—

5308 Kishimoto Rin

Abstract

Set a research question about how to reduce the number of people who do not eat breakfast, and conduct research. That because many young people in Japan skip breakfast. According to a survey by the Ministry of Agriculture, Forestry and Fisheries, 56% of respondents said they did not eat breakfast, and about 60% said they only eat staple foods for breakfast. Also, low-income households were slightly more likely to skip breakfast. For this reason, we propose to provide lunch boxes nationwide in the morning. Currently in Japan, some elementary schools are implementing this, but it is an activity by volunteers. I think it is difficult to carry out volunteer activities consistently all over the country. Therefore, instead of serving meals in the same way as conventional school lunches, we think that it may be possible to solve the problem by distributing meals for one person in the form of lunch boxes, and making the contents simple so as not to impair nutrition.

1. Introduction

In Japan, It includes young people who do not have breakfast or eat only staple foods such as rice, bread and cereal. There are people who study the connection of breakfast and performance of exercise or learning. However, Breakfast is the most important meal in a day, because between dinner and breakfast is the longest in a day and breakfast becomes energy to be used for a day. So I decided that the research question is how to reduce the number of people who do not eat breakfast and study this question. I am going to study by using the internet and books.

2. Discussion and implications

The increasing rate of skipping breakfast has become a problem and a question for men and women aged 18-39 was carried out by the Ministry of Agriculture, Forestry and Fisheries. This research says that 56% of people who participated in this question answered that they eat breakfast every day, and 23% said they seldom eat it. And, it showed that 60% of the respondents eat only staple foods such as rice and bread for breakfast by the same research. In addition, there were respondents that eat fruit and pastries as breakfast.

The Ministry of Agriculture, Forestry and Fisheries research about meals that have balanced nutrition. They ask if they ate meals that have balanced nutrition more than twice a day. Only

24% of people said they take it almost every day in this research. Both people who recognize that a well-balanced meal is good for their health and people who find it troublesome are 60-70% of whole respondents. From this result, school breakfast and selling lunch boxes in the morning contribute to a decrease in skipping breakfast rate. According to the Ministry of Health, Labor and Welfare, the number of obese people has been increasing since 2013. Number of people who are not interested in eating habits or exercise habits is 30 to 40 percent increase, so I think it is necessary to getting people interested in food more than ever.

My hypothesis is that school breakfast in the morning contributes to this problem. School breakfast is a meal that students eat in the school and it is implemented in part of Japanese elementary schools and American schools. The difference between Japanese and American is that Japanese is implemented by volunteers but American is implemented by cooks. I suggest selling lunch boxes, breads and setting up a place to have breakfast.

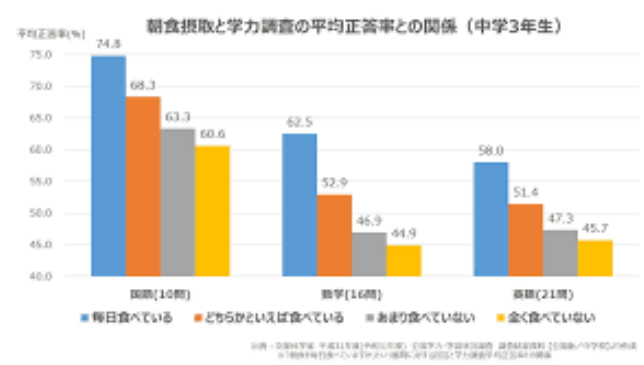
School lunches are done in the morning at schools overseas and in some Japanese schools. Morning school lunches in elementary schools in Japan are carried out by local volunteers using the school's home economics room. However, it is said that the cooks often work from 7 o'clock in order to prepare the school lunch. Therefore, there is a problem that cooks have to work early in the morning.

In the United States, school lunches in the morning are more popular than in Japan, and meals are provided to children who cannot eat breakfast due to various family circumstances. Next, about the effect of breakfast. It is thought to help improve health, learning and athletic performance. According to a study by the Ministry of Education, Culture, Sports, Science and

Technology, students who eat breakfast have higher grades and athletic ability than those who do not.

In addition, Breakfast is said to be the most important meal of the day, so it has the role of replenishing the energy used in the day. Staple foods such as

rice contain a lot of glucose, which is an energy source for the brain. Skipping breakfast can have side effects, such as feeling dizzy until lunch. In addition, breakfast also plays a role in maintaining a normal body clock and balancing with the rhythm of life. A specific breakfast should be balanced and nutritious. Prioritizing this, I suggest adopting “Japanese-style meals”.



“Japanese-style meals” is a dietary habit of eating a variety of side dishes such as fish, meat, vegetables, seaweed, beans, etc., mainly rice that is suitable for the climate of Japan. Not only is it excellent in nutritional balance, but it is also characterized by the use of many agricultural, forestry and fishery products produced in various parts of Japan. Therefore, it is expected that adopting a "Japanese-style meals" will lead to an improvement in the food self-sufficiency rate and the inheritance of the precious food culture that has been nurtured in various places for a long time. From the above, I think that it will be useful for getting interested in food even after going out to society.

3. Conclusion

My conclusion is to provide school lunches in the form of lunch boxes in the morning. Incorporating "Japanese-style eating habits" into bento boxes, we will raise interest in food while passing on food culture. Since many of the reasons for skipping breakfast are "troublesome to prepare" and "lack of time," we believe that school lunches in the morning are effective. However, I would like to consider the lack of breakfast due to lack of food, the place where it is provided, and the problems of workers as future issues.

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World Education Reform

~Equal education for all global citizens~

5309 Kouki Kizu

Abstract

I wondered about the educational environment in Japan today, with its thoroughgoing averaging of education and a society in which the stakes are high. Based on this, I began this research with the thought that if the educational environment in the world were also improved, there would be more opportunities for work and fewer poor people in developing countries, and each individual in developed countries could make the most of his or her own weapons. The research question is: "What mechanisms and institutions need to be in place to provide an environment that enables all citizens of the world to complete primary and secondary education with effective and practical learning outcomes at the lowest possible cost?" In the course of my research, I have endeavored to understand the current state of education around the world through books and the Internet, and from the current situation, I propose the following idea: "International video teaching sites should be operated by educational institutions in each country.

1 Introduction

Many of you may have wondered about the averaging education and the stakes in our society. In fact, the level of education in Japan is not so high, or perhaps it would be better to say that there is room for growth. The reason for this is the independence of children and students. How many people in Japan understand the true significance of learning? How many of them have even once considered the importance of learning in their lives? They lose the significance of their studies, lose the intellectual curiosity that is inherently instinctive in human beings, engage in daily labor in the name of learning, and before they know it, they are thrown out into society, questioning who they are, and eventually die without even resolving their doubts. This is not a good situation. In order to break through this situation, I thought it would be a good idea to give each individual independence during the educational period that almost all adults pass through, and to let each individual find his or her own interests and weapons. I believe that the first step in creating a sustainable future full of happiness is education.

The following is a speech by UN Secretary-General Ban Ki-moon that contributes to this consideration. "If all students in low-income countries could finish school with basic reading skills, 171 million people would be lifted out of poverty. If all mothers in low-income countries had secondary education, 12 million children could be lifted out of stunting. If all women had secondary education, child mortality would be reduced by 49%. If all women had completed primary education, childbirth deaths would be reduced by 66%. If all girls had secondary education, there would be 64% fewer child marriages and 59% fewer premature pregnancies." The importance of primary and secondary education in developing countries is clearly demonstrated by the use of numbers. These figures show that no one can talk about the importance of education. I want to make education in the world better. With this in mind, I conducted this study.

2 Discussion and implications

Research Methods

- (1) Identification of issues in Japanese education through books and the Internet.
- (2) Identification of education systems and issues in developed countries in general through books and the Internet.
- (3) Identification of education systems and issues in developing countries through books and the Internet.
- (4) Propose optimal educational systems based on an understanding of the current state of education around the world.

Issues to be Solved in the Research

To begin with, it is necessary to identify the problem to be solved in the study. In conclusion, "What mechanisms and institutions need to be put in place to provide an environment in which all world citizens can complete primary and secondary education at the lowest possible cost, with effective and practical learning outcomes?" This section describes the process of convergence on this issue for developing and developed countries separately.

First, let's look at the challenges in developing countries. There are two main challenges in developing countries: the reasons why children cannot go to school and the shortage of teachers. UNICEF lists the following six reasons why children are out of school

- Insufficient number of schools for the number of children
- Children are working to support their families
- Inability to pay for school fees and materials
- Natural disasters such as droughts and floods, and humanitarian crises such as conflicts
- Schools are not well equipped
- Parents and community members do not understand the importance of education.

In addition to the above, there are some areas where it is not legal to do so. For example, on September 18, 2021, in Afghanistan, which was seized by the armed Taliban, middle and high schools resumed classes, but the Taliban issued a decree that "all male teachers and male students should return to their respective educational institutions," with no call for female teachers or female students. This has caused one girl to voice her sadness, saying, "I lost my dream of becoming a doctor. It is not only the fact that children cannot go to school that is serious. It is also the fact that there is a shortage of teachers. The government, believing that schools are necessary to provide access to education, inevitably needs to provide teachers in addition to schools. However, it is difficult to take this step in a country where no generation is being educated, and education remains inaccessible.

Next, I would like to talk about the challenges in developed countries. Many people believe that developed countries do not have educational challenges and maintain nearly the highest level of education, but there are still issues that need to be resolved even in developed countries. There are three main problems: "dropouts and breaking geniuses," "educational disparities caused by family economic status," and "extreme academic backgrounds". First, I believe that the main cause of dropouts and breaking geniuses is the fact that classroom

teaching is the main educational style. This is because classes are designed to match the average pace of learning, so those who do not understand the content are left behind, and those who have already mastered the subject matter ahead of time are forced to keep up with their classmates. Both of these factors waste time and reduce motivation to learn. The main reason why students are unable to keep up with their studies is not only because of the "classroom" style. Due to the economic disparity in families, children from families with low incomes are unable to spend other expenses on education, such as tuition and school lunches, causing the learning gap to widen as they lack the funds for necessary materials compared to the children around them. This is not the only problem. As described earlier, the "extreme educational background" is also a problem. Why does this happen? Companies use education as an indicator to judge a person. So how is it used? Suppose there are 10,000 applicants. Companies, of course, do not have the time to review the resumes of all applicants in detail. At that time, they need an indicator to determine whether a person is a good candidate or not, and they will decide whether to accept or reject the applicant within that indicator. Many companies use "educational background" as an indicator. Why? The answer is quite simple: it proves that a person has the academic ability to be accepted to a university and is capable of hard work. However, this way of deciding is not a good way to go because there are events that can cause a high school graduate to miss out on the best and brightest. Therefore, it is obvious that the academic society is also one social problem.

Considerations on the Challenges

Many of the problems in developing and developed countries can be attributed to their educational styles. Currently, the mainstream educational style is the "classroom style," in which one teacher lectures to multiple students. In fact, this seemingly harmless style of education has caused most of the problems I mentioned in "Issues to be Solved in Research". There are three main elements that are necessary for "classroom-style" education: the students, the school, and the teacher. There are a number of issues that lie in the process of putting all of these in place, and even after they are in place.

First, let's talk about "students". In developing countries, it is not easy to get an opportunity to get an education due to the need to secure living resources. What about developed countries? In some religions, women are not allowed to receive education. Some students work instead of education because they cannot afford to pay school fees. Then there is "location". It costs a fortune to build and maintain a school. It costs at least a billion dollars to build a school, and annual maintenance costs are added on top of that, so it costs a lot to provide a single location. Finally, there are "teachers". In developing countries, the number of educated people is small, resulting in a shortage of teachers. Even in developed countries, although the number of teachers themselves is sufficient, the labor costs of hiring teachers are immeasurable.

Furthermore, even with these three factors in place, there are still challenges. The challenge is "consistency in learning progression". If everyone takes the same class at the same time and with the same level of difficulty, those who are slow learners relative to their peers will have trouble keeping up, and those who learn quickly will find the class boring.

3 Conclusion

What reforms, then, would solve the challenges listed in 2? I propose an educational system that would solve most of these issues. It is to "impose an obligation on each country to introduce international on-demand class sites (hereinafter referred to as "IOCS"), which would be managed by the educational institutions in each country, and furthermore, UN member states would be obliged to make their education available and fulfill the obligation".

What exactly is international on-demand teaching? It is a collection of video lessons posted on YouTube and published in one place. Specifically, in order to have class videos posted on YouTube posted on IOCS, video contributors indicate their requests for posting to educational institutions in their countries, and if approved by the educational institutions in their countries, the videos are posted on IOCS. Then, based on the evaluation of the video posted on IOCS, the educational institution in each country will give an appropriate salary to the video contributor. In addition, for students who have new questions that cannot be solved in the video lessons, a chat room will be set up for students to share and solve their questions in real time with other students in the field of study. In the following section, we will discuss in detail the issues that can be solved by introducing such a site.

In the case of the traditional education system of "face-to-face classes," the three elements of "student," "place," and "teacher" must be provided by the government to make it work. In the case of IOCS, however, the government only needs to provide "electric power infrastructure" and "personal computers. If the government establishes an income system for contributors based on various perspectives, such as the number of views and high rating rate, it is expected that the number of contributors will automatically increase through advertising income without the government having to arrange teachers. Furthermore, it is expected that the number of students who fail to keep up with their studies will be reduced because of the individualized and optimized learning system that allows students to view lessons at their own pace.

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How to reduce the space debris

~No accidents in outer space~

5312 Kazuki Kobayashi

Abstract

Do you know what “the space debris” is? It may be an unfamiliar word to you, but actually it has become a serious problem recently. There are various sizes in space debris and they exist a lot. In fact, the probability of collision between space debris and the rocket which was launched is more than 10 percent. Moreover, if the situation becomes worse, it will be thought that space debris will crash into the communications satellite or meteorological satellite. Then, I decided to start the research in order to reduce the space debris.

The conclusion of this research is that to make the space debris collide with the mass of metal. That is to say, if space debris is absorbed into the mass of metal, the number of space debris will be decreased.

1. Introduction

Today, the problem of space debris has become very serious. In general, this problem can be divided into two parts.

First, space debris can make our lives inconvenient. They are moving incredibly fast, so if they collide with some satellites which are indispensable for our lives, functions of satellites will not work.

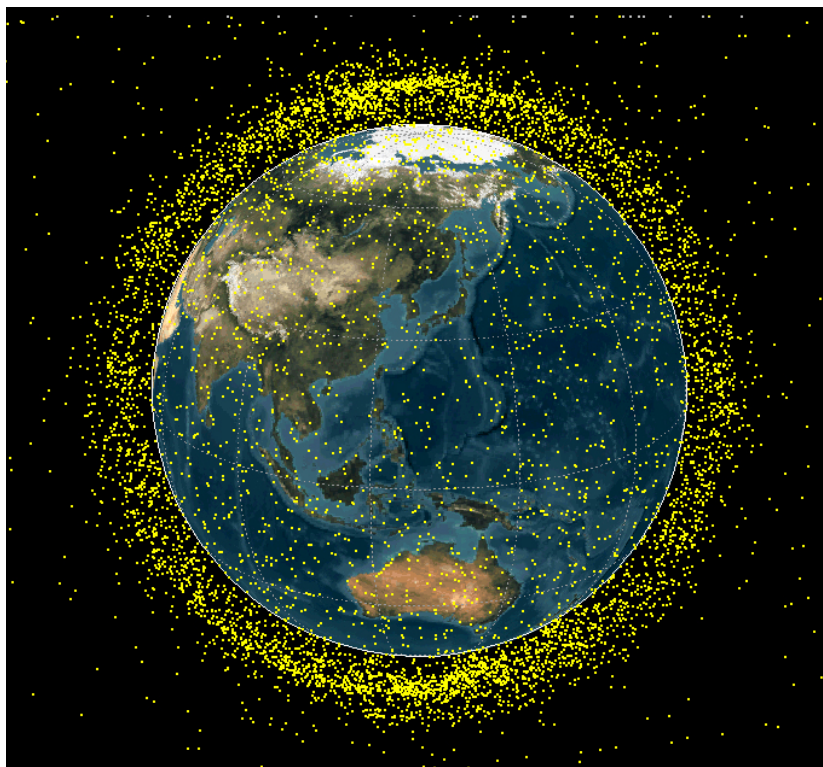


Figure 1: The dissemination of space debris (JAXA)

The immense amounts of yellow dots that cover up the Earth indicate the allocation of space debris. Space debris are predominantly composed of wreckage of rockets, and they vary in size. The places which are crowded with space debris can be classified into three parts; altitude 700 ~ 1000 km, 20000 km, 36000 km. There are Earth Observation Satellite, GPS Satellite, Communication Satellite, and Weather Eye in each place. We will not be able to use map functions in a smartphone and to gain information about weather conditions if they stop working.

Second, space debris can have an influence on the project of developing outer space that has been promoted lately. Nowadays, it is often said that the probability of collision between rockets and orbital debris on the trajectory of rockets is more than 10 %. Moreover, Donald J Kessler, who was a researcher of NASA announced the Kessler Syndrome in the 1970s. The Kessler Syndrome is a theory that when the density of space debris exceeds a certain value, space debris begins to collide with each other, creating even smaller space debris. In other words, if space debris is not collected, it will continue to increase and space exploration will become almost impossible.

For the above problems, we must eliminate the space debris as quickly as possible.

The precedent case of tackling to remove space debris can be given an example, “Guideline for reduction of space debris” by UN Committee On the Peaceful Uses of Outer Space (UNCOPUOS). This guideline implies principles for not to increase the amount of debris as we can, such as curtailment of debris that were emitted in ordinary phase and quick return of the shuttle which made missions succeed.

Nowadays, Japanese enterprises have also been combating this problem. In 2021, “ELSA-d”, a satellite for experimenting to get rid of debris which was produced in Astroscale, was launched. The way to remove them is so intriguing, which is to grab debris from behind softly.

Like this, various companies and groups are taking a lot of measures to reduce debris. In my research, I want to suggest a new counter-plan.

The methods of my research are as follows.

[1] Seize the situation of dissemination of space debris by examining the spot where debris is intensive.

[2] Investigate the speed of debris and suggest ways of reduction from the point of the kinetic energy and thermal energy.

2. Discussion and implications

The following graph was announced by NASA. This is the graph that collected the transition of gross debris and main accidents in outer space.

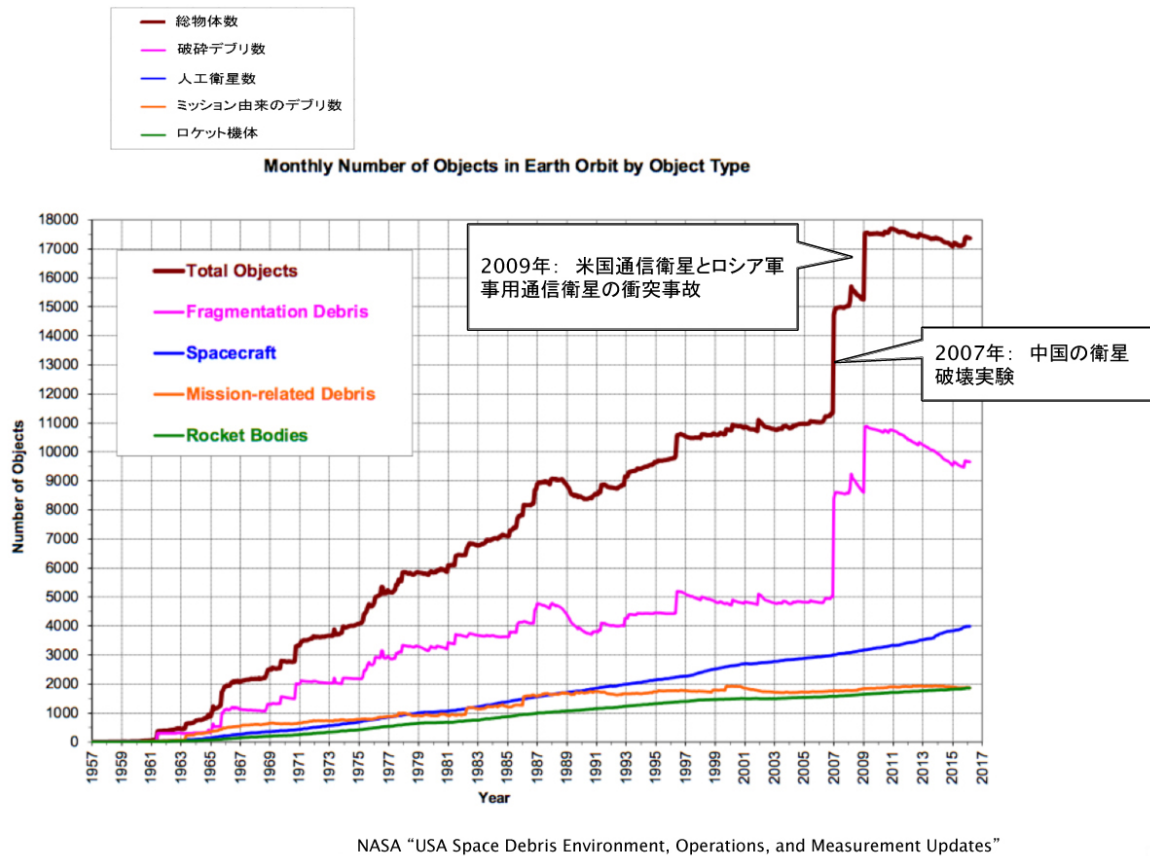


Figure 2: Transition of gross numbers of orbital debris in outer space (NASA)

This shows that if huge airframes collide with each other, of course, the amount of debris keeps increasing. Therefore, the world is trying to manufacture fuselages as strong as possible. Now, one method I would suggest for reducing space debris would be to crash the space debris into a huge chunk of metal. Then, I need the metal which has heat-resisting properties and high density. The metal I would suggest is Tantalum, Tungsten and Rhenium. Now, simulate how much size is needed for each metal.

The size of the debris supposed to be collected is 10^3 cm^3 . The painting and tank of rockets is composed of aluminum alloy, so the space debris is supposed to consist of aluminum alloy. Then, assume the density of the aluminum alloy is 2.8 mg/cm^3 and the velocity is 8.0 km/s . The mass of the space junk is $2.8 \times 10^3 \text{ mg} = 2.8 \times 10^{-3} \text{ kg}$, so the kinetic energy of debris is $\frac{1}{2} \times 2.8 \times 10^{-3} \times 8.0^2 \times 3.6^2 \times 10^6 = 1161.216 \times 10^3 \text{ J} = 1161 \text{ kJ}$

[1] Tantalum

The heat of fusion of Tantalum is 36.57 kJ/mol , so the amount of heat produced by 10 debris impacts is $11,610 \text{ kJ}$, and Tantalum needs 317 mol . Since the molar mass of Tantalum

is 180.9 g/mol, the mass of Tantalum required is $180.9 \times 317 = 57,431 \text{ g} = 57.431 \text{ kg}$. Since the purchase price of Tantalum currently is about 14,000 yen per kg, the cost approximately $14,000 \times 57.431 = 804,034 \text{ JPY}$.

[2] Tungsten

The heat of fusion of Tungsten is 35.3 kJ/mol, so the amount of heat produced by 10 debris impacts is 11,610 kJ, and Tungsten needs 329 mol. Since the molar mass of Tungsten is 183.8 g/mol, the mass of Tungsten required is $183.8 \times 329 = 60,470 \text{ g} = 60.470 \text{ kg}$. Since the purchase price of Tungsten currently is about 7,000 yen per kg, the cost approximately $7,000 \times 60.470 = 423,290 \text{ JPY}$.

[3] Rhenium

The heat of fusion of Rhenium is 60.43 kJ/mol, so the amount of heat produced by 10 debris impacts is 11,610 kJ, and Rhenium needs 192 mol. Since the molar mass of Rhenium is 186.2 g/mol, the mass of Rhenium required is $186.2 \times 192 = 2,234 \text{ g} = 2.234 \text{ kg}$. Since the purchase price of Rhenium currently is about 30,000 dollars per kg (4,374,600 JPY), the cost approximately $4,374,600 \times 2.234 = 9,772,856 \text{ JPY}$.

From the above simulations, I consider the best metal is Tungsten.

3. Conclusion

The purpose of my research is to present a method for reducing the space debris that is increasing recently, and the answer to this purpose is to produce the mass of Tungsten, as described in "Discussion and implications". Tungsten has a very high melting point, which is a representative refractory of metal. The issues for future research are to search companies that would support this proposal and to conduct experiments in outer space with more precise simulations. My research takes place in a big scale area of space, so it is not easy to solve, but I hope that we will be able to get closer to a solution by cooperating with various companies.

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Promoting Care Prevention

~Supporting Independence for the Elderly from a Sports Aspect~

5313 Hotaka Kobayashi

Abstract

The purpose of this study is to reduce the increase in the number of people requiring long-term care, and we will research ways to reduce the increase. As for the frequency and duration of exercise, the target is to engage in physical activity, including strength training and sports, for at least 60 minutes a day for those aged 18 to 64, and at least 40 minutes a day for those aged 65 and older. The Ministry of Health, Labor and Welfare (MHLW) is currently implementing a policy on physical activity by the government. One problem with this initiative is that it is currently only a paper-based survey. This does not provide accurate information. We have come up with a system to determine the actual behavior of the participants, rather than a written survey. We also came up with a system that would allow participants to continue and improve on the recommended exercise regimen. However, there are problems with this plan as well. Those problems are supervision and funding. As mentioned earlier, there is currently a shortage of caregivers. As a result, it is difficult to secure personnel to conduct the tests. Supervisors would still prefer to be people in the nursing, exercise, and medical fields with a certain level of knowledge. It is also necessary to consider what form this proposal, if approved, would take.

1. introduction

The declining birthrate and aging population have become major problems in the world. In European countries in particular, the aging of society is becoming more serious, as is the case in Japan. A typical occupation that is inevitably burdened by the aging of society is the caregiver. Generally speaking, the target population of caregivers is the elderly. As the population ages, the number of caregivers will inevitably increase. In the nursing care world, the elderly are divided into four groups: general elderly, specific elderly, those in need of support, and those in need of care. The assumption is that those in need of support and those in need of nursing care are generally receiving nursing care support. In the case of Japan, the number of people requiring nursing care is increasing every year, and it is estimated that there will be a shortage of about 380,000 nursing care workers by 2025. I wondered if there is any

way to solve this problem, because if this situation continues, a negative spiral may occur, in which Japanese caregivers' work will become more difficult than it is now and they will quit caregiving. Independence support is necessary to prevent the level of care required from advancing. We thought that care prevention activities would be the best way to support independence. Care prevention can be applied to exercise and sports. The ultimate goal of this study is to reduce the increase in the number of people requiring long-term care, and we will research ways to reduce the increase. Since I like exercise and sports, I decided to research care prevention in terms of sports and exercise.

Also, since the current situation in Japan is, to put it bluntly, the worst in the world, I thought that if I could solve the problem in Japan, I could naturally solve the problem in the world.

2. Research Methods

Basic information on long-term care prevention was found in materials from the Ministry of Health, Labor, and Welfare and other ministries and agencies.

Formulate hypotheses of possible solutions based on current issues and research on how to solve them.

(Eventually, we will be able to propose some kind of plan.)

3. Results of research

According to The Ministry of Health, Labour and Welfare (MHLW) 2.53 million care workers are needed in 2025. However, under current conditions, only 2.15 million caregivers are expected to be available. The difference is 377,000 people, making a chronic shortage of nursing care workers a problem. Caregiving is the process of caring for the elderly and sick and assisting them in their daily lives, and those who receive care are called "those in need of care. The current situation is a shortage of nursing care workers. As for the causes of people needing nursing care, the top causes of people aged 65 and over needing nursing care are, from the first, cerebrovascular disease, dementia, debility due to old age, senility, and frailty. Care required due to debility increases with age, with 16.6% of those aged 75 and older requiring care in the later stages of life, and furthermore, it is the number one cause of care required by those aged 85 and older, accounting for 25.6% of all care required. Frailty, one of the causes of those requiring long-term care, is defined as when three or more of the following five conditions are met: (1) poor nutrition, (2) poor physical ability, (3) poor muscle strength, (4) poor depression/activity, and (5) poor daily activities, and early detection can prevent a person from requiring long-term care. For this reason, it is important to detect

the frail state early and to respond to it. The Center for Medical Education has published an article that states, in part, "Nutrition, moderate exercise, and adequate communication with others in society are the keys to preventing the elderly from needing nursing care. In other words, through exercise, we can help people to avoid the need for new care. In other words, exercise may reduce the number of people who need new caregivers. This would also lead to an improvement in the shortage of caregivers.

As for the frequency and duration of exercise, the target is to engage in physical activity, including strength training and sports, for at least 60 minutes a day for those aged 18 to 64, and at least 40 minutes a day for those aged 65 and older.
(From the website of the Longevity Science Foundation)

4. Conclusion, Discussion and Future Prospects

MHLW has a physical activity policy that is currently being implemented by the government.

The figure on the right briefly summarizes these efforts.

The figure on the right is a brief summary of this initiative. One problem with this initiative is that it is currently a paper-based survey only. This makes it impossible to get an accurate picture.

Therefore, I have come up with a system to judge the participants by actually seeing them in action, rather than by a written questionnaire, as shown in the figure below. I also came up with a system that would allow the participants to continue with the recommended exercise regimen and improve it. However, this plan also has its problems. The problems are supervision and funding.

As mentioned previously, there is currently a shortage of caregivers. Therefore, it is difficult to secure personnel to conduct the test. Supervisors would still prefer to be from the nursing care, exercise, or medical fields who have a certain level of knowledge. We also need to consider what form it would take if this proposal were to be approved.

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Jul. 02, 2021

Leather products cause environmental problems **~reduce the bad influence of leather industry~**

5314 sato taichi

1.abstract

I started to research this theme because I was interested in leather products and I use them every day .For example ,my pen case, bag, clothes and shoes and so on . like this we use leather products a lot without realizing it . Then I saw an article that showed the influence for our nature and society . It causes a lot of environmental problems in developing countries, for example Bangladesh .I decided to search about the environmental problems in Bangladesh .in that country there wasn't a severe rules for environmental problems in leather industry by the way the things which is bad for environment are the pollution substance when the factory make the animal skin get to be able to used as a materials this process is called tanning .tanning is divided to two kinds and they are the one from plants and metal . The plant one is not bad for the environment but the metal one is.especially chromium is used mainly then the hexavalent chromium which is not dealt with in the company is terribly bad for the environment there are other bad stuff but it is the main one .

I'd like to solve this problem to use the products comfortably .I suggest that Bangladesh make a rule for making leather products or not to use chromium tanning .Then they cost a lot so the developed country has to support the developing country in the money part. Then I'll write down the circumstances in Bangladesh and how to make the leather industry in Bangladesh better.

2.discussion and complication

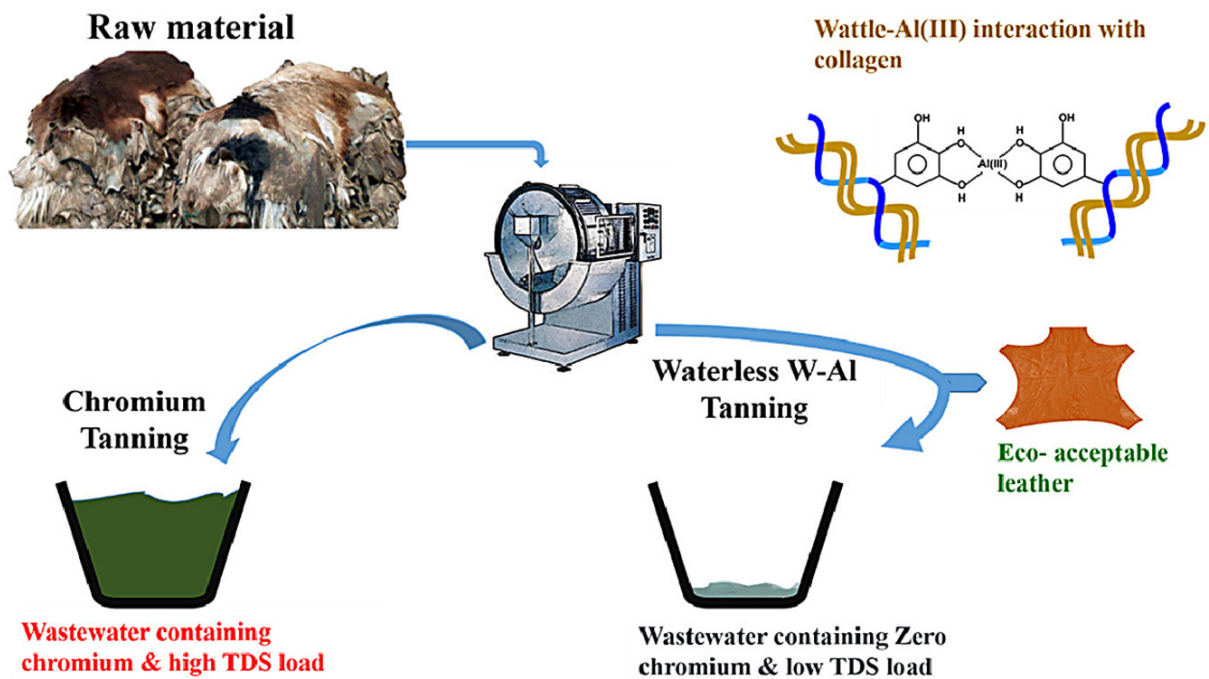
A parliamentary committee is urging Bangladesh's government to shut down tanneries that are dumping waste into a river in the dhaka suburb of Savar because a Chinese built waste treatment plant is not operating properly. the tanneries have been dumping large amounts of chromium a heavy metal used in the production of Lawhide into the Dhaleshwari river according to an investigation by the parliamentary standing committee on environment and climate change .

at least 15,000 cubic meters of wasted water goes into the Dhaleshwari river each day. The chromium goes straight into the Dhaleshwari river , putting the environment and people in great danger . It's a difficult problem to solve because leather and leather goods are what they depend on as export products . and they almost only have the leather company for living and making money . It's so important for the country .Then they can't reduce the number of leather products or make severe rules to make products.



This is the picture of the workers wasting chromium or leather in the river . the amount seems to be a lot.they can waste the stuff because there are not severe rules I guess so I'd like to make new rules.

By the way, what is tanning? It's the process of making animal skin be able to be used as a material for leather products.



Like this picture ,chromium tanning is mainly used in Bangladesh .They get the chromium to absorb into the leather and the leather gets to be strong for water or decay .

I have two ideas to solve this leather problem . First, I'd like to make new rules in Bangladesh .I think to make severe rules is the best way to reduce the number of chromium tanning but it's difficult for the country because they make money only from the leather industry.then I came up with an idea that the country which import the leather products support the industry in bangladesh .to do so bangladesh can make leather products without the pollution and the developed country can import the safe leather from bangladesh.

Second, I think changing the way you tan the leather is one good way to solve the problems. For example, the plant tanning is good for the environment but it costs a lot then as I said the developed country supports bangladesh to give money to tan .or using these ideas make the leather industry better .

3.conclusion

in my opinion I have two ideas to solve this problem .first bangladesh have to make a severe rules to reduce the number of the use of chromium tanning .but it costs a lot then the developed country which import the leather products from bangladesh have to support the bangladesh leather country in the money part .second I suggest that bangladesh dont use chromium to tan the leather but use stuff from plants or nature .it also costs a lot but then the developed country have to support them .

Guidance on the use of benzos in the treatment of theft

~The role of social workers in effective use and addiction prevention ~

5315 Mizuki Shibusawa

○ Abstract

I have spent a year researching what support could be provided to people imprisoned for theft while they are in prison in order to help them find employment after their release. I came up with a solution to this problem: social workers could be employed by the state as civil servants and stationed in prisons. When working in prisons, social workers are people who provide guidance on the attitude to life and consultation on how to build successful relationships with people who are serving their sentences. In this case, we would like to employ a large number of people once as provisional recruits, and then after training, we would like to employ them on a full time basis. By recruiting people on a probationary basis, it will be easier to attract people to Chile, which lags behind developed countries in terms of educational institutions, and ensure that the necessary skills are imparted. From a financial point of view, we know from the stable economic situation in Chile that it is likely to be possible to continue the project once it is realized, so we would like to discuss the process required to reach that point, in other words, what financial resources are needed and how to define the qualifications to be recognised as a social worker when it is institutionalized. We would like to make this an issue to be addressed in the future. We are currently considering the role of social workers in the use of benzodiazepines in the treatment of kleptomania.

1 Introduction

According to the 'Relationship between unemployment and crime rates: time series and prefecture-specific panel analysis', a positive cointegration relationship between crime rates and unemployment rates is observed for theft offenses. In addition, my personal image was the awareness that people with a criminal record were less likely to find employment. In fact, in Chile, there are a very large number of young people who commit theft out of poverty and, after being released from prison, are unable to find decent work and end up re-offending. In light of this situation, we decided on the theme because we felt that there was a lack of support for those who had once atoned for their crimes and were trying to move on. In the course of our research, we found that many countries were actively providing support after release from prison, but few countries could be said to provide sufficient guidance on building vocational skills and human relations in prison. Therefore, the present study focused on the support that can be provided while in prison. In the process, we learned that some people who repeatedly commit theft suffer from a

condition called kleptomania. Kleptomania is a dependence on theft and refers to a state of dependence on the act of stealing itself. The use of benzodiazepines, which are used to treat various psychiatric disorders, was thought to be an effective treatment for this condition. However, benzodiazepines are drugs with strong withdrawal symptoms, so caution should be exercised. Much research has also been conducted on ways to break free from benzodiazepine dependence.

2 Discussion and implications

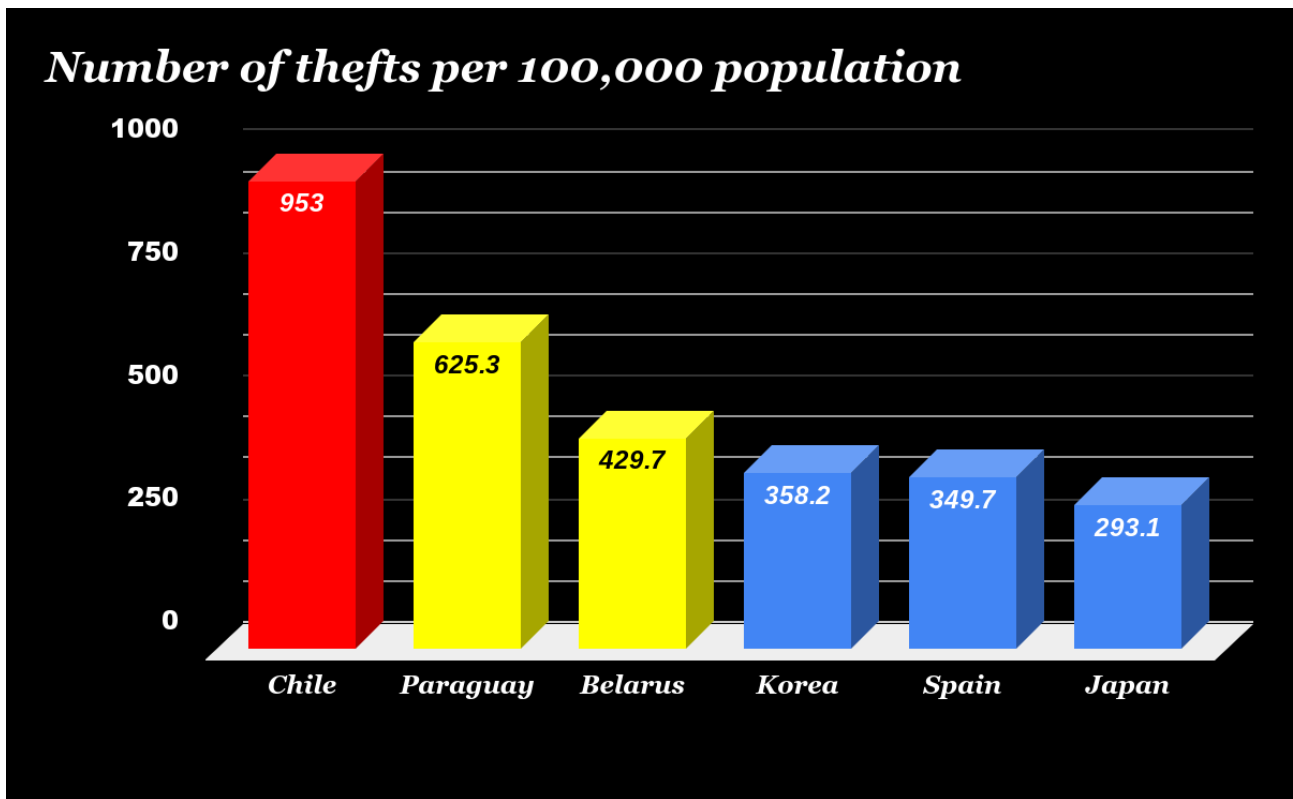
Gráfico 76: Distribución de personas detenidas por DMCS, según mes de ocurrencia del delito, 2019

	Robos	Homicidios	Lesiones	Violaciones	Hurtos		
Enero	20,0%	0,2%	29,9%	0,2%	49,7%		
Febrero	20,5%	0,3%	29,1%	0,3%	49,7%		
Marzo	20,1%	0,2%	27,7%	0,2%	51,8%		
Abril	21,1%	0,2%	26,4%	0,2%	52,1%		
Mayo	20,3%	0,1%	26,9%	0,2%	52,5%		
Junio	21,5%	0,2%	25,4%	0,2%	52,8%		
Julio	21,2%	0,1%	24,1%	0,2%	54,3%		
Agosto	19,2%	0,1%	25,4%	0,2%	55,1%		
Septiembre	21,2%	0,2%	29,7%	0,2%	48,8%		
Octubre		47,7%		0,2%	20,0%	0,1%	32,0%
Noviembre		39,7%	0,1%		27,3%	0,2%	32,7%
Diciembre	19,9%	0,3%	31,5%	0,4%		47,9%	

Fuente: elaboración propia, basada en el cuadro 19 (archivo Excel, sección de Carabineros de Chile)

(From Chilean Police Statistics)

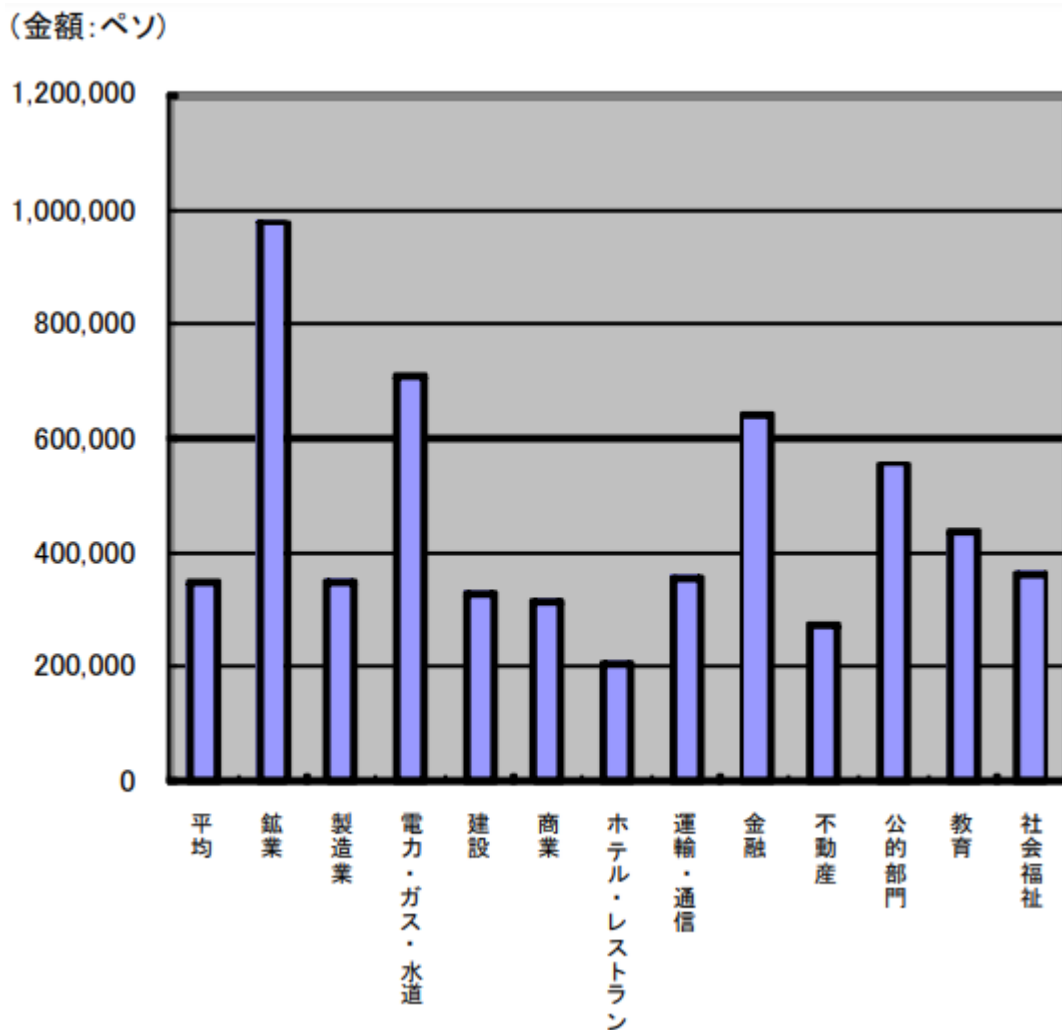
The graph above shows the percentage of people arrested in Chile in 2019 for each offense by month. It can be seen that in most months, 'Hurto', meaning theft, accounted for half of all arrests.



(Compiled from the Meiji University database).

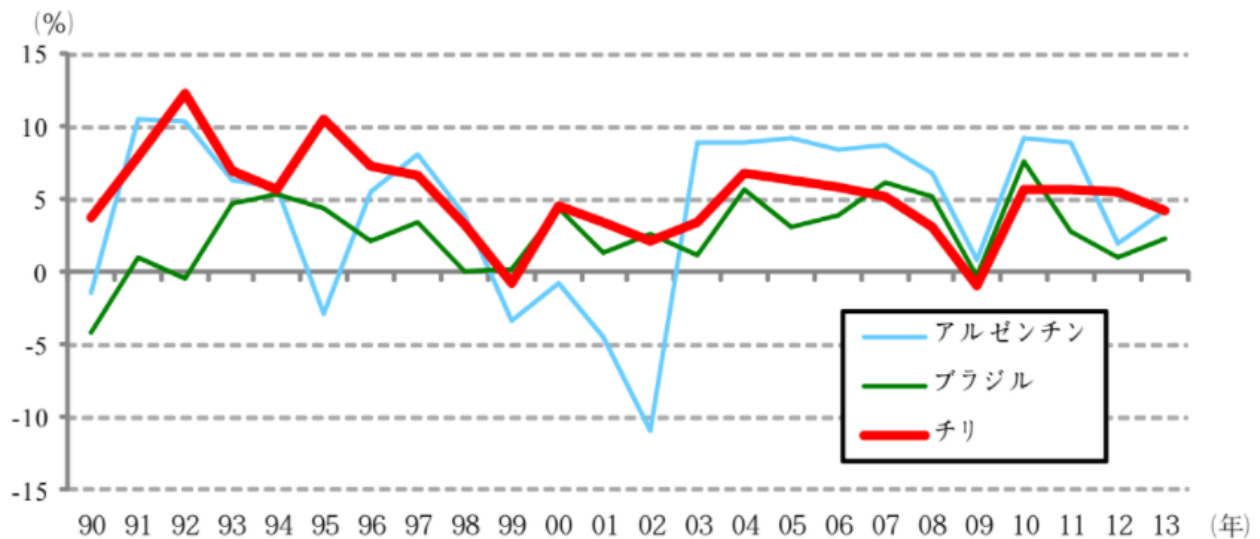
This graph shows the number of thefts per 100 000 population. The yellow items are for developing countries and the blue items are for developed countries. Compared to Paraguay, which is also a developed country, Chile has about 1.5 times as many thefts as Paraguay, Belarus has about 2.2 times as many as Belarus and Japan, which is a developed country, has about three times as many as Japan. We have not been able to survey all the literature on initiatives in developed countries, so this may not be the whole story, but we have considered two main initiatives: the first is the system of daytime outings and work experience introduced in Denmark, and the second is the system of daytime outings and work experience introduced in the US and Europe. The second is the system introduced in Western countries where social workers are stationed at probation centers. The first, the daytime work experience system, allows people who have committed relatively minor crimes, such as theft, to go outside the probation center during the day and learn the occupational skills they will need for life after release. Although the system was considered groundbreaking immediately after its introduction, there were constant complaints from the neighborhood as people broke the prohibition and drank alcohol while out and committed crimes again, and measures to strengthen control were still being considered. (Okabe, 2013) As the initiative had failed to control the behavior of prisoners in developed countries, it was deemed difficult to introduce in developing countries. The second social worker was then considered. As we "support ex-prisoners in finding employment, we need to promote research and studies focusing on social workers." (Takikawa, 2018) Social workers, as the name suggests, are social work professionals. According to the

Japanese Association of Social Workers, 'Social work is a practice-based profession and discipline that promotes social change and social development, social cohesion, and the empowerment and liberation of people. The principles of social justice, human rights, collective responsibility and respect for diversity are at the core of social work. Building on social work theory, the social sciences, the humanities and local and ethnic-specific knowledge, social work works with people and different structures to address life challenges and enhance wellbeing". Currently, expatriate social workers have been introduced in Germany and Switzerland, and they provide consultation and guidance on how to facilitate life attitudes and relationships. (Washino, 2019) Next, we considered new initiatives to be introduced in developing countries based on initiatives in developed countries. The study focused on Chile, where crime statistics and other data are easier to obtain. In examining the two initiatives, it was decided that the introduction of social workers would be effective, given their high feasibility and low risk. The reason for the form of employment by the state as a civil servant was to reduce the costs of setting up a social worker's office. Many social workers belong to social worker offices and are dispatched to work from there, others work for public institutions as civil servants, and still others are freelance and work on various jobs (from Career Garden). We therefore tried to gather information about social worker offices in Chile, but either there were no offices themselves or we could not find any information. Therefore, we considered the case that there is no office. If there is no office, there are three options: setting up a new office, hiring a civil servant or finding a freelancer. The establishment of a new office was abandoned due to cost issues and the fact that it is expected to take too long to get people together. Freelancing was also considered insufficient as a conclusion, assuming that there are no freelancers as there is no guarantee that there are actually people currently working as freelancers, although it would be quickest if there is a guarantee that there are actually people who are working as freelancers, but there are not always any. The last remaining option is for the state to hire them as civil servants. If they are hired as civil servants, their employment status would be somewhat stable. The problem here is where the wages would be paid from. According to the 'Chilean Consumer Market Survey', the average monthly income of people in Chile was around 380,000 pesos (792.73 pesos to the dollar)



If we assume the same as in Japan, we would pay a monthly income of approximately 380,000+ pesos per person. We considered whether the country could continue to pay such a high wage. When we looked at the economic situation in Chile, data from Mitsubishi UFJ Research and Consulting showed that the economic situation is currently stable in Chile.

Chart 2. Economic growth rates in Argentina, Brazil and Chile since 1990



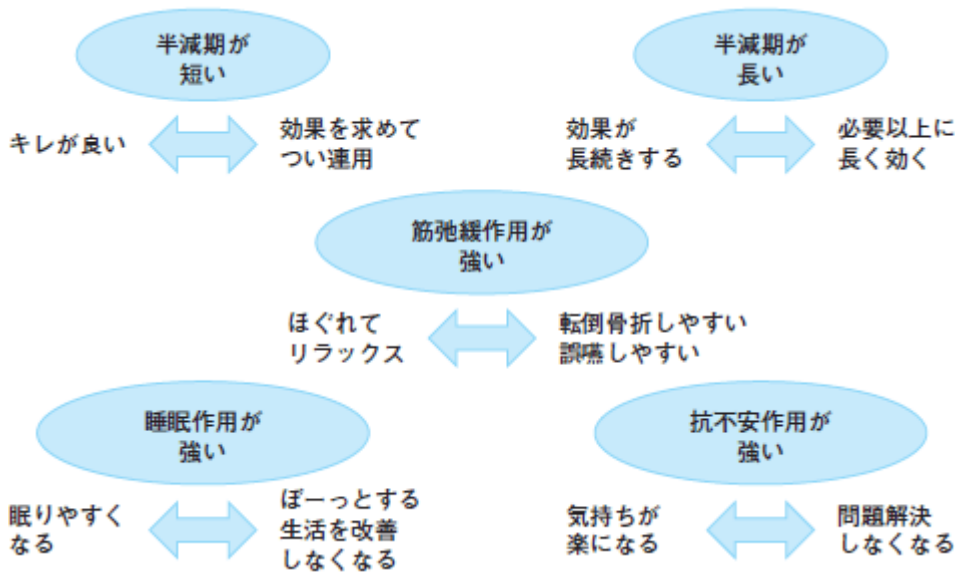
This means that once they have a prospect of doing so with a wage, they will be able to provide ongoing support. Next, regarding qualifications, we wanted to refer to the recruitment regulations for social welfare specialists employed by the State as public servants in Japan. So we looked into it and found that (1) the applicant must be qualified as a social worker, (2) the applicant must have completed a master's course related to social welfare studies at a welfare-related university or a university with welfare-related faculties or departments, or be recognised as having equivalent academic ability, and (3) the applicant must have social (3) Educational experience in social welfare (experience as a teacher at a university [including graduate and junior college] or professional training college) or equivalent ability (4) A considerable number of research achievements in social welfare, including articles and research reports from a wide range of perspectives. (From the Ministry of Health, Labour and Welfare website) This makes it difficult to attract people and even requires educational institutions to produce people with such qualifications. As we could not find information on the current level of educational institutions for qualification in Chile, we decided that it would be dangerous to assume that there are currently educational institutions. Therefore, when recruiting people to become social workers, we considered a form of temporary employment, in which people would once undergo training set up by the state, and those who had completed the training would be hired as social workers. This way, the State can know which people are capable and how capable they are, and there is no need to create a new school or qualification system.

Further investigation revealed that some repeat thieves have a condition known as 'kleptomania'. Kleptomania is (i) a recurrent inability to resist the urge to steal things, not for personal use or for their monetary value, (ii) a heightened sense of tension immediately before committing the theft, (iii) a sense of pleasure, satisfaction or release when committing the theft, (iv) the stealing is not an expression of anger or retribution (5) The stealing is not a response to anger or retribution, nor to delusions or hallucinations (6) The stealing is a symptom that is not well explained by a

predisposition, manic episode or antisocial personality disorder. Cognitive behavioral therapy (CBT) is now the main method of treatment. Cognitive therapy and cognitive behavior therapy are types of psychotherapy (psychotherapy) that work on cognition to help people feel better. Cognition here refers to the way we receive and think about things. When stressed, people tend to think pessimistically, which puts them in a state of mind where they cannot solve problems, but cognitive therapy aims to balance such thinking and create a state of mind that can cope better with stress.

The specific ways in which they do this are. (1) Understand the patient as a person, identify his/her problems, issues, strengths and weaknesses, formulate a treatment plan, share it with the patient and proceed with the interview while working together. (2) Use behavioral techniques to develop a rhythm of life. One method is behavioral activation, which involves looking back on daily life and prioritizing, in a reasonable way, (a) the fixed activities that are performed on a daily basis, (b) activities that need to be given priority and (c) activities that are enjoyable and rewarding. In particular, increasing the number of activities that are enjoyable and rewarding is effective. In addition, certain physical activities and exercises are used to regain confidence and a sense of control, to have experiences of interacting with others, and to solve problems that may be affecting symptoms using problem-solving techniques, thereby increasing adaptability. (3) Correct cognitive biases by focusing on automatic thoughts and examining their evidence and counter-evidence. Books and the web may be used at this point. Some kleptomaniacs feel that no one else has the same problem. In many cases they do not consider their behavior to be a disease. Explaining that kleptomania is treatable and providing patients with educational books, self-help groups and information and support is a common approach. Withdrawal symptoms of benzodiazepines are extremely varied. Anxiety, irritability, insomnia, flu-like symptoms, tremor, various sensory abnormalities, impaired concentration and many other symptoms, as well as convulsive seizures, hallucinations and delusions are present in a small number. They are difficult to distinguish from the symptoms of the primary disease. It is important to remember that if any symptoms appear relatively quickly (often within one or two weeks) after a reduction or discontinuation of BZDs, withdrawal symptoms should be the first thing to come to mind. And if symptoms improve quickly after returning BZDs that have been reduced or discontinued, the likelihood of withdrawal symptoms increases further. If doctors do not recognise withdrawal symptoms as withdrawal symptoms, they may label them as 'worsening of the primary illness', 'somatisation' or 'indefinite complaints' and leave them unaddressed appropriately, and patients may think that they have worsened after stopping the medication. They think that they are not yet cured. When withdrawal symptoms are not recognised by doctors and symptoms do not improve, patients may turn to the internet for solutions. There is an abundance of information on the internet, some of which is hostile to medical treatment itself. As a result, patients may lose faith in their doctors, leading not only to a

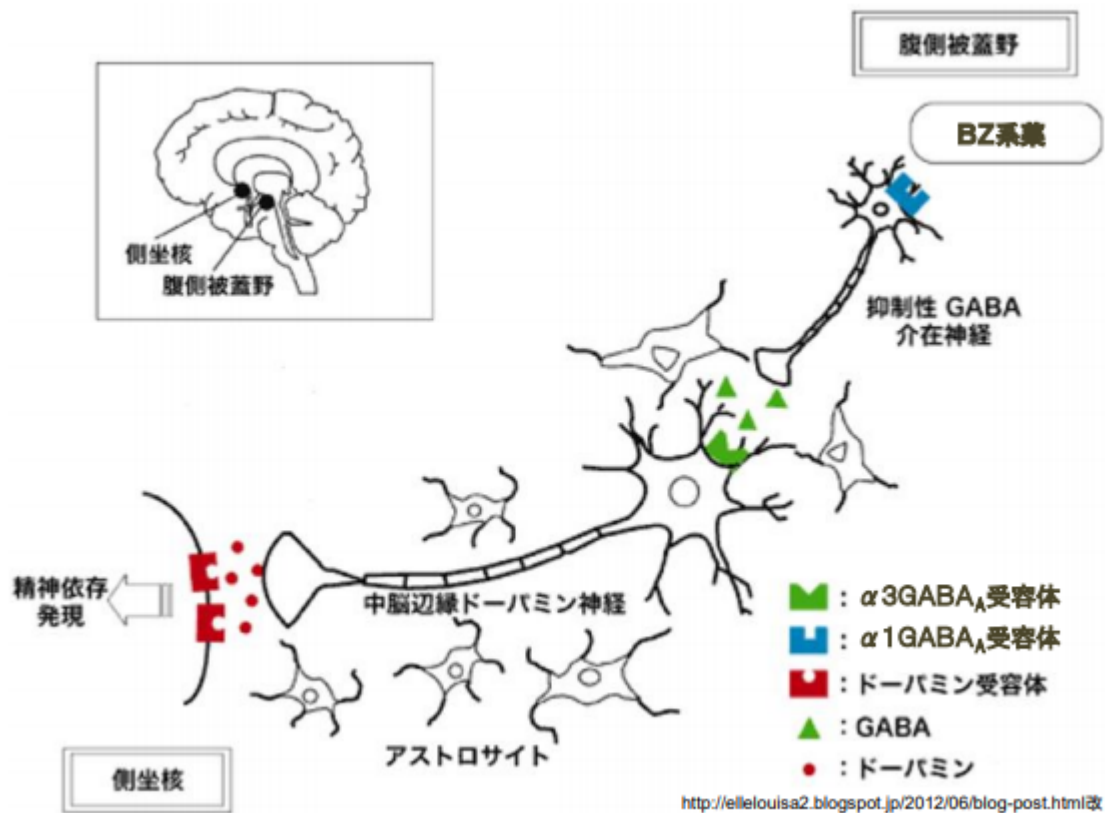
breakdown of the relationship, but also to a distrust of healthcare as a whole. Withdrawal symptoms are a negative aspect of medicine, including a history of neglect, and require a very sensitive response.



https://www.igaku-shoin.co.jp/paper/archive/y2016/PA03197_03 2022/09/26

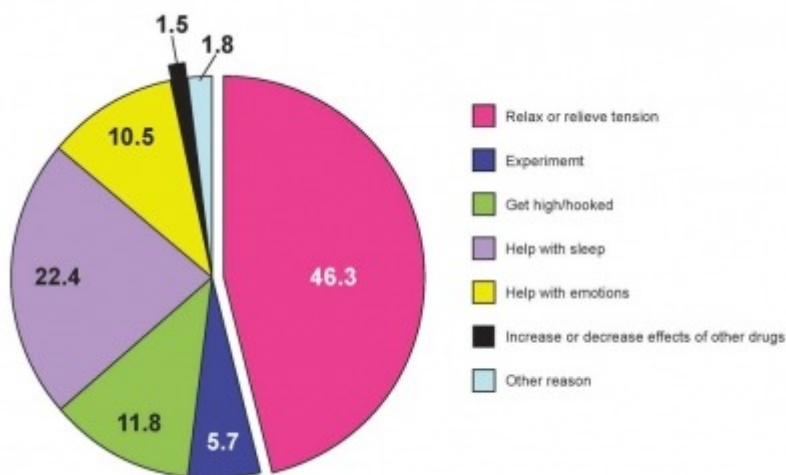
Dependence on benzodiazepines is formed as follows. Benzodiazepines act on GABAA receptors and de-repress GABAergic nerves, thereby activating dopaminergic nerves and increasing dopamine release in the nucleus accumbens. Down-regulation of dopamine receptors as a feedback response in the organism following abnormal excitation of dopamine signaling = reduction in the number of receptors. Dopamine signaling is deficient due to receptor depletion, forming drug cravings = psychological dependence.

(see diagram below)



https://www.phamnote.com/2017/10/blog-post_11.html 2022/09/26

Benzodiazepines are often used as anti-anxiety drugs. They are also often used as sleeping pills, and most vehicles taking them are patients with psychiatric disorders. (see diagram below)



One of the characteristics of benzodiazepines is that dependence is often formed simply by taking doses within insurance coverage without abuse. To prevent this, it is considered necessary to interview patients about the effects of the drug and prescribe as little as possible, even if it is covered by insurance.

3 Conclusion

The conclusion I have come to is that social workers should be employed by the state as civil servants and stationed in prisons. In doing so, I would like to hire a large number of people once as provisional recruits, and after training they would be hired on a permanent basis. From a financial point of view, we know from the stable economic situation in Chile that it is likely to be possible to continue the project once it is realized, so the process required to get to that point is an issue for the future. There are two main things to consider. How to finance the project and, in institutionalizing it, how to define the qualifications to be recognised as a social worker. With regard to qualifications, various issues remain, such as what the training content should be, whether an examination should be set up, and what the recruitment criteria should be for provisional employment. If the standards are too loose, it will take too much effort to train people, and if the standards are too strict, it may not be possible to attract people. Therefore, we will consider in the future how far we can compromise. There is also uncertainty about whether the government will educate people after they have been hired with some standards, and what conditions they will then have to meet before they can be officially hired. Ideally, we would like to make the conditions so that they meet the recruitment regulations for social workers employed in developed countries, but we also think that it may be difficult to make them too strict from the start. We also need to think about how we would treat this recruitment. As for financial resources, we have no idea where we stand at the moment, so we will think about it in the future. We think crowdfunding will be difficult because we will need money as a nation. Although there are still many crowdfunding websites that aim to support developing countries, it is difficult to find a form of crowdfunding where a state solicits funds for a specific country. The country of Chile also thought that it would be difficult for a state to recruit through crowdfunding, although crowdfunding is an easy way to obtain funds. We also considered issuing government bonds, but concluded that green bond bonds are currently popular in Chile and that government bonds with unclear objectives might not attract popularity. Expertise in both funding and qualifications is likely to be required, so we will be asking for experts' opinions as we consider this in the future.

In terms of the educational content to be provided to social workers, we are considering educating them on basic knowledge about benzodiazepines, how to take them to avoid dependency, what symptoms are suspected to be dependency, and communication skills to be a good person to consult with. Thorough education is necessary when using benzodiazepines for the treatment of kleptomania, as they play a role that cannot be played by doctors.

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Sustainable Clothing Purchasing

~Consumer Awareness~

5316 Nana Segawa

Abstract

The purpose of this study is to determine whether environmental labels have an impact on purchasing behavior and to introduce a unified and effective environmental label in the fashion industry. While environmental awareness is increasing, the fashion industry is an industry with a large environmental burden, and although there is an increasing movement toward environmentally friendly initiatives, only a few people are taking concrete steps to address this issue. What we focused on is one of the required initiatives, which is to give information about production and environment when purchasing products. Environmental labels play a role in conveying such information to consumers, but their influence on purchasing behavior is small. Comparing Eco Mark, which has high recognition in Japan, and Blue Angel, which has high recognition worldwide, Eco Mark is less actively promoted. However, the situation of increasing environmental awareness in the fashion industry is consistent with the time when the Blue Angel system was launched. Therefore, we propose the introduction of a unified environmental label by the Fashion Association of Japan and differentiation of products by the presence or absence of an environmental label.

1 . Introduction

Growing environmental awareness is self-evident: in 2020, Japan will charge for plastic bags and ethical thinking is on the rise. In addition, the SDGs, adopted by the United Nations in 2015, are now being advocated by many companies.

In this context, the fashion industry is still an industry with a large environmental impact. According to the United Nations Conference on Trade and Development, the fashion industry is the second largest environmental polluter. According to the Ministry of Environment, the production of clothing each year emits about 90 million tons of carbon dioxide, 45 tons of scrap materials, and consumes about 8.3 billion cubic meters of water. This is equivalent to about 25.5 kilograms of carbon dioxide emissions and 2,300 liters of water consumption per piece of clothing, and about 180 million pieces of scrap wood and other materials. In addition to environmental problems, the fashion industry also causes labor problems such as long working hours and low wages.

It is thought that the influence of fast fashion is the main reason why the industry has become so environmentally burdensome. Fast fashion refers to apparel companies that mass-produce clothing in a short period of time in accordance with fashion trends. Fast fashion has led many companies to engage in price competition, resulting in homogenization of products. As the quality of the products declined, sales at the regular price became sluggish, and the products were sold at a discounted price. A vicious cycle was created in which consumers stopped buying at regular prices because they expected discounted prices.

However, there is a new movement in the fashion industry to take environmentally friendly initiatives. For example, the Fashion Pact was created at the G7 summit in 2019. A third of the world has joined the Fashion Pact and set targets against three issues: climate

change, biodiversity and ocean protection. There is also a #LowestWageChallenge campaign against labour issues, which calls for the disclosure of minimum wages for workers.

However, only a small number of consumers are taking environmentally friendly initiatives when it comes to fashion. According to the Ministry of the Environment, about 60% of people are interested in sustainable fashion, but less than 10% are taking concrete steps. This is true only in Japan, but according to Greenindex (2012), the percentage of people who think they are making green purchases, that is, selecting and buying items that have the lowest possible environmental impact, is about 70% in some countries at best, but the percentage of people who practice green purchasing does not vary greatly from country to country. The percentage of people who are doing green purchasing practices does not vary greatly from one country to another. Therefore, it is thought that even in Europe and the United States, where people often have an image of environmentally friendly initiatives, consumers' purchasing awareness is not so different from that in Japan.

This study aims to determine whether environmental labels have an impact on purchasing behaviour; the NACS committee defines an environmental label as a product (product or service) that communicates environmental information about the product to consumers through the product, its packaging and advertising. Environmental labels allow consumers to judge the environmental impact of a product when they purchase it, so that ethical consumption can be enabled by this indicator. One of the initiatives required by the Ministry of the Environment is "to make information on the environmental impact and environmental considerations of products available at the time of purchase. However, we thought that environmental labels may not have much influence on purchasing behavior because it is thought that environmental awareness is not so active when purchasing goods in many countries.

The advantages and disadvantages of Eco Mark were examined, compared with other successful environmental labels, and considered points to keep in mind when introducing environmental labels in the fashion industry.

The Eco Mark is "an environmental label attached to various products (products and services) that are recognized as having minimal environmental impact throughout their life cycle, from production to disposal, and as being useful for environmental conservation. The purpose of the label is "to promote the formation of a sustainable society through the selection of environmentally conscious products and the promotion of environmental improvement efforts by related companies". We decided to investigate Eco Mark because it has the highest recognition among Japanese environmental labels and we thought it would have more influence on our purchasing behavior. It also has the advantage that it is in Japanese and easy to collect information. We collected information mainly through questionnaires conducted by the Eco Mark Office and the Consumer Affairs Agency.

2 Discussion and implications

The advantage of the Eco Mark is its high recognition, and the problem is that its influence on purchasing behavior is small. According to the "Results of Survey on Image of Eco Mark Labeling (Summary)," the awareness of Eco Mark is about 80%, which is four

times higher than other environmental labels. Nevertheless, according to the "Eco Mark Recognition Survey Report", the highest percentage of respondents purchased Eco Marked products without knowing that they were Eco Marked when they purchased them. In addition, many people do not have a particular image of the Eco Mark.

Several factors contribute to the success of environmental labels. These include: ease of understanding by consumers, economic incentives, commemorative campaigns, environmental awareness through the media, and boycotts of self-certified labeled products. Of these, what Eco Mark lacks is an economic incentive.

The fashion industry is said to have a large environmental impact. According to the United Nations, the fashion industry is the second most polluting industry in the environment. According to the Ministry of the Environment, about 60% of clothing given away in Japan is disposed of or landfilled.

According to the CFP program, of the carbon dioxide emitted from the procurement of raw materials to the disposal of clothing, the carbon dioxide emitted from the procurement and production of raw materials accounts for 60% of the total. This is quite bad for the environment in the midst of mass production and mass consumption. Currently, with the fast fashion trend, the price per piece of clothing is decreasing and the short cycle of clothing is also progressing.

I propose an initiative to put labels on garments to prove that they are environmentally friendly products, and after the garments have been worn for a few years, the stores can buy them back to give them value.

This initiative addresses several issues.

First, we will reduce the environmental impact of environmentally friendly production.

Second, it prolongs the cycle of clothing by adding value to garments that have been worn for a number of years.

Third, collecting used clothing reduces the amount of clothing that is disposed of or landfilled.

Fourth, the buy-back creates an "economic incentive" to encourage consumers to purchase environmentally labelled products.

In addition, stores that collect used clothing can secure repeat customers and improve their corporate image.

We also propose to differentiate between products with environmental labels and other products. There are two reasons.

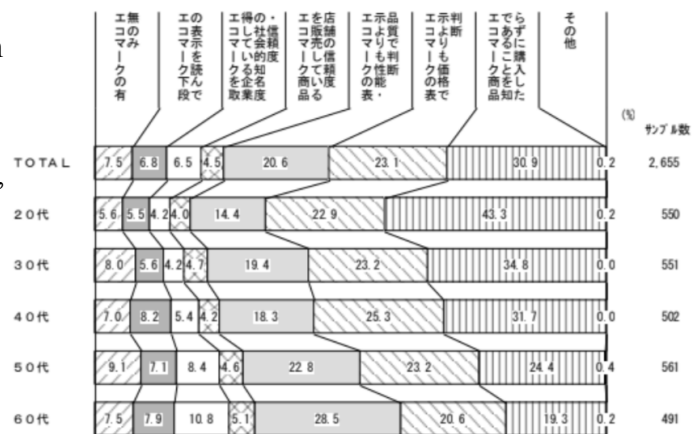


図 2-25 エコマーク商品購入時の判断材料

One is to increase the value of firms with environmentally labeled products. According to Gao and Ando (2017), Tobin's q of firms in the manufacturing industry that produce products with environmental labels that require third-party certification tends to be higher than those that do not. Tobin's q is the value of a company as valued in the stock market divided by its capital reacquisition price, and the higher the value, the more worthwhile the investment. Gao and Ando (2017) consider this to be a factor of the price premium and the product being introduced. Price premium is the price that customers are willing to pay extra for one product over another. However, in this case, energy consumption efficiency is the reason for this, so we considered that there is no price premium for garments with environmental labels. He also said that products with environmental labels in the manufacturing industry and their companies are introduced elsewhere. However, we have not seen any environmentally labeled products introduced in the apparel industry, so we did not think this was another reason to increase Tobin's q for apparel companies.

The other reason is that consumers want products that are easy to recognize as having an environmental label.

We believe that the best way to promote environmentally friendly products is to create a new environmental label under the Fashion Agreement. This is because the current situation is in line with the situation when the BlueAngel environmental labeling system was launched. One of the challenges of introducing an environmental label in the Fashion Agreement is that it assumes that no third party will confirm the environmental considerations of fashion companies, so the environmental label becomes a self-certification and its credibility is weakened. However, a third of the world's fashion companies, including some of the biggest names in the industry, are participating in the Fashion Accord, which sets targets for climate change, biodiversity and ocean protection, and is actually having a positive effect. For example, 40-50% of the energy used by participating companies is now renewable energy. Therefore, we believe that trust in existing companies and the fashion agreement itself will help to alleviate distrust of environmental labels.

3 Conclusion

We propose to introduce environmental labels in fashion agreements and to buy used clothes with them. In doing so, we also distinguish between products with and without environmental labels.

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The Marine Plastic Issue

~How to promote biodegradable plastics~

ID 5317 Yua Takano

Abstract

I have been researching how to promote the use of biodegradable plastics, which I have found to be effective in the recent problem of marine plastics. As a result, they concluded that the first step to promote biodegradable plastics is saving and the need to stabilize the income of each household. However, there are several issues that must be resolved in order to use biodegradable plastics. There is currently only one type of plastic in the ocean that can be degraded by microorganisms, and it is thought the fact that it is so valuable is what is causing these problems. The reasons for this are the high cost, the fakes in circulation, and the low strength of the container. I will continue our research to solve those problems.

1. Introduction

As scientific developments have made our lives more convenient, plastic has become an indispensable part of our lives. On the other hand, plastic waste discharged into the ocean causes marine pollution and has a negative impact on the ecosystem. Discharge of petroleum-based plastics into the ocean affects fish, which lack the ability to digest the chemicals. Solving such a marine plastic problem is necessary to protect the health of those of us who normally eat fish and other seafood. And, I have always been interested in animal welfare and ecosystems. That's why I've decided to investigate.

Currently, prior research has identified the types and raw materials of biodegradable plastics that are degraded by microorganisms in the ocean. However, I could not find any studies that examined detailed issues such as low distribution volume.

Recommend research mainly on the Internet, books, and other literature. However, the information in the literature is not always correct, so compare several references to find information.

2. Discussion and Implications

Plastics in common use today are human-made compounds, and therefore have low biodegradability, the property of being completely decomposed into carbon

dioxide and water by the action of microorganisms that exist in the natural world. Therefore, if it is not decomposed by human hands, it will remain in the natural environment.

Biodegradable plastics are generally defined as plastics that, after use, are eventually completely decomposed into carbon dioxide and water by the action of naturally occurring microorganisms. On the other hand, biomass plastics, which are easy to mistake, are defined as plastics that are chemically or biologically synthesized from renewable biomass resources. Since biodegradable plastics focus on functions related to degradability and biomass plastics focus on raw materials, the two do not always coincide. Therefore, biomass plastics, which are characterized by the fact that they are made from biomass, a renewable resource, do not necessarily have the function of biodegradability.

Also note that mixing biodegradable and conventional plastics will result in the loss of biodegradable functionality, as the biodegradable plastic will degrade while the conventional plastic will not.



Figure: Organization of the terms biomass plastic, biodegradable plastic, and bioplastic

Source: Mitsubishi Research Institute, Inc.

Biodegradability depends on the environment. There are roughly three types of environments in which biodegradability is evaluated: high temperature and humidity, soil environment, and aqueous environment. Biodegradability in the aqueous

environment is relevant to the microplastics issue, but only a small fraction, such as PHBH (polyhydroxybutyrate/hydroxyhexanoate), is degraded in the aqueous environment.




	PHBH	バイオPBS	PLA
 コンポスト (高温多湿)	分解される	分解される	分解される
 土壌環境	分解される	分解される	分解されにくい
 水環境	分解される	分解されにくい	分解されにくい

Figure: Biodegradability of each biodegradable plastic in hot, humid, soil and water environments

Source: Mitsubishi Research Institute, Inc.

Currently, of the total amount of plastic produced in Japan (approximately 10 million tons per year), only about 2,300 tons (0.02%) is biodegradable plastic distributed in Japan, and only a small amount is marine biodegradable plastic. Another challenge is to ensure the reliability of the products. Due to high development costs, inexpensive products made from polyethylene are being distributed around the world under the false pretense of being "marine biodegradable plastic. The problem is that the fake products do not decompose into water and carbon dioxide even if they decompose until they lose their shape, becoming microplastics. It is necessary to establish a global system to properly distinguish between such so-called "imperfect" marine biodegradable plastics and "legitimate" marine biodegradable plastics, which are degraded to water and carbon dioxide by microorganisms, and to certify them based on a correct evaluation.

In Japan, products made from biodegradable plastics can be labeled through an examination by the Japan BioPlastics Association.



Figure: Certification labels given to products that have been audited and passed by the Japan BioPlastics Association

Source: SUSTERRA

Other problems are that biodegradable plastics are made on the assumption that they will biodegrade, so they are not strong enough to be used as containers. And the stronger they are made, the longer it takes for them to biodegrade. Therefore, they are used for products that are supposed to be consumed and discarded immediately, such as fishing line, for example, but cannot be used for products that are supposed to be used for a long time.

3. Conclusion

I thought that in order to promote biodegradable plastics, it is important to stabilize the world economy and income. This is because in a recession like the current recession in Japan, people are looking for inexpensive products and prioritize convenience even if they know it is not good for the environment. In addition, the fact that income disparity will cause some households to actively use biodegradable plastics and others not to will be an obstacle to solving the global ocean plastic problem.

However, in order to realize these goals, it is necessary to solve not only the ocean plastic problem but also various other global problems. Therefore, it is necessary to search for another small-scale, relatively feasible solution.

Reducing Poverty among Ethiopian Farmers

Irrigation to Increase Mono Yield

5318 Taniguchi Haruki

Abstract

Thirty-two percent of Ethiopia's population lives in poverty. One of the main possible reasons for this is that 85% of Ethiopians are farmers. Although droughts occur frequently in Ethiopia, the farming system is mainly rain-fed agriculture, which means that they suffer from low production, that is, lack of funds. This is reflected in the fact that most of them do not even own one hectare of land. To overcome this situation, we propose to establish a drip irrigation system in the country. Drip irrigation is a method of irrigation that delivers water and fertilizers with pinpoint accuracy to wherever they are needed. This has the advantage of making efficient use of water and fertilizers for African countries that are suffering from water shortages and have little or no access to fertilizers due to lack of funds. However, because of the initial installation and maintenance costs of drip irrigation, we are considering the establishment of a system in which funds are shared through the incorporation of agricultural enterprises.

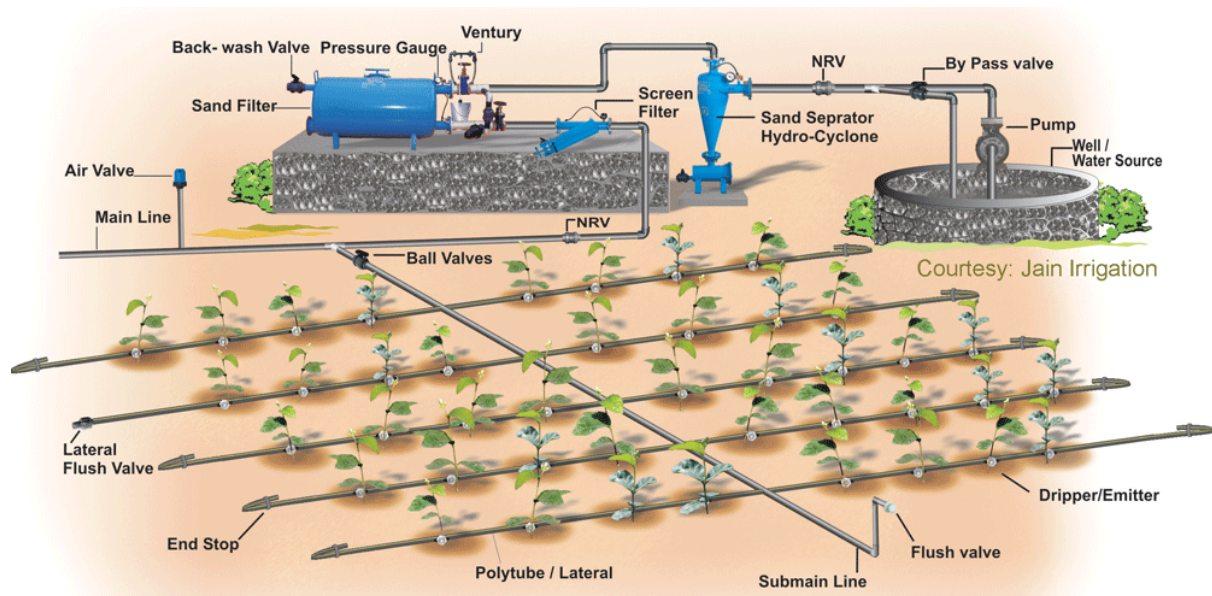
1. Introduction

All African countries suffer from a state of poverty. Ethiopia is one of them. Since 85% of Ethiopia's population is made up of farmers, we thought that improving Ethiopia's agricultural system would alleviate poverty. Ethiopia was selected because its poverty rate is neither too low nor too high, and because most of the population is engaged in agriculture. Although no directly related previous studies were found, a study on how to engage with model farmers to disseminate agricultural extension services at the household level in rural Ethiopia found that as long as a system was in place to improve agriculture. Thus, it was possible to increase production and share technology among farmers, although only for a single village. This is a result of the study of Ethiopia's poor farmers, who are the main source of income for the country's agricultural sector. This suggests that even in Ethiopia, a poor country, there is potential for improving the agricultural system within the country, depending on what is done to improve it.

In Asia, grain yields have increased in proportion to the increase in irrigation rates over the 40-year period from 1980 to 2020. In Africa, on the other hand, little irrigation

policy was implemented over the same period and there was little increase in grain unit yield. Thus, I believe that irrigation policies should be actively implemented in Africa because history has proven that higher irrigation rates increase crop yields.

2. Discussion and implications



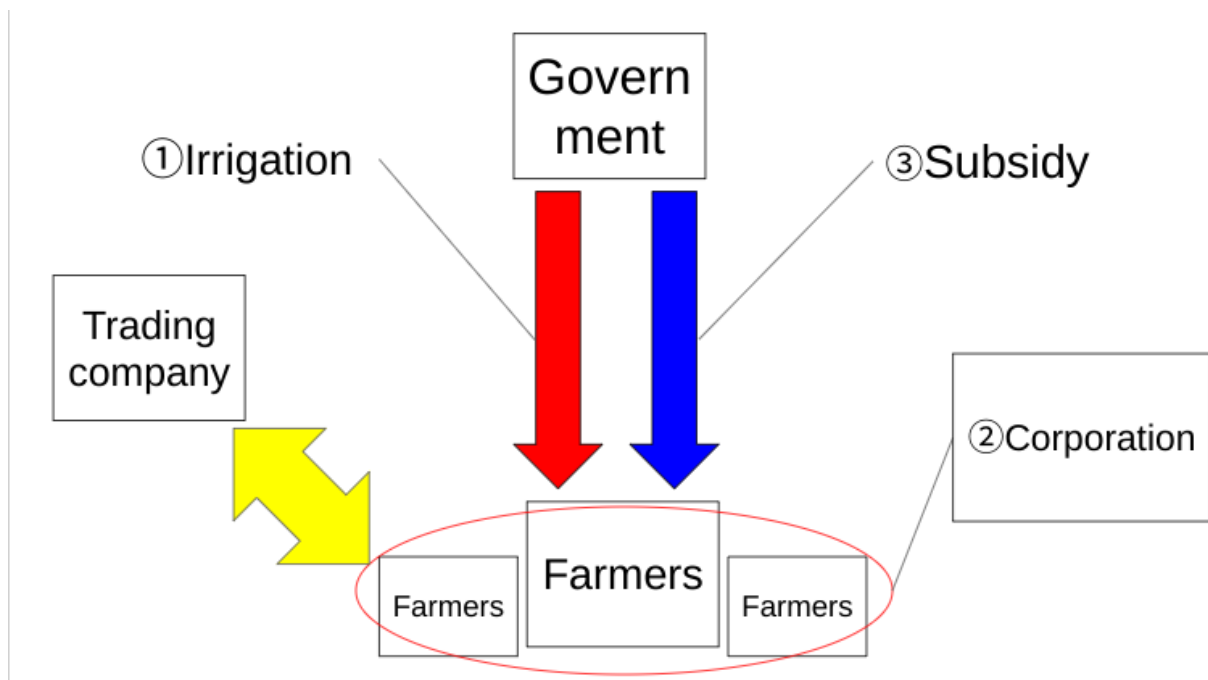
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I propose drip irrigation as a method of irrigation. Drip irrigation is a system in which water tubes are stretched throughout the field and water is supplied to the roots with pinpoint accuracy. This minimizes unevenness in the application of water and fertilizer. This is expected to further increase grain yield. Sprinkler irrigation has the problem of water loss due to evaporation and runoff of water that is not fully absorbed by the crop and blown out of the field by the wind. However, drip irrigation makes it possible to supply the minimum necessary amount of water to the crop without fail. The same can be said for fertilizers. Since many people in Africa suffer from water shortage and water pollution, drip irrigation can be a good opportunity to use water more effectively. In my research last year, I studied the effects of introducing drip irrigation. Specifically, I studied the nitrogen use, phosphate use, and yield of eggplant when growing eggplant in the open air on a 60-a plot. The results showed that compared to watering by hand, the initial installation cost of 230,000 yen reduced nitrogen use by 16% and phosphoric acid use by 25%. In addition, the yield per 10-a increased by 17%. This is enough to recover the initial installation cost in about 0.7 years. Although the high initial installation cost was a bottleneck in the implementation of drip irrigation, the rapid growth can be expected if the funds can be secured.

It is necessary to investigate how the funds should be secured? The first is for Ethiopia to invest in drip irrigation as a country, and the second is to receive financial assistance from other countries. The third is the incorporation of agriculture. It has three advantages. The first is the efficient use of capital through the sharing of farming equipment. Second, it will be possible to secure human resources who are interested and motivated in agriculture. And third, it is easy to pass on the technology. Therefore, we have come to the conclusion that we should promote the incorporation of agriculture in order to secure funds.

3. Conclusion

We propose to push for drip irrigation in Africa and to establish agricultural corporations to secure funding and efficient implementation of agriculture.



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Promoting of shop local ~self-sufficiency of country scale~

Abstract

It is said that the population of the world will grow. Also, some regions are short of food, while others have food surpluses. Developed countries with low food production rely on food imports. However, in impoverished regions, the income gap makes it impossible to import food, and they end up starving. To solve this problem, self-sufficiency in poor areas is necessary.

In order to realize these societies, it is necessary to find problems in areas where agriculture is not active and to improve them. In this research, we will proceed with research with a focus on the central part of Africa.

In central Africa, people living in villages have been suffering from food shortages. Agriculture in such villages is highly affected by the climate because of lack of technology, resulting in unstable production. Slash-and-burn farming on barren land also poses problems such as low production and the inability to cultivate in a few years. In order to solve this problem, we have to expand production and introduce technology. According to other countries' agriculture, I'm sure that large-scale agriculture will increase and sustain production.

Based on the above, I propose that several villages work together in order to carry out agriculture.

1 Introduction

Last year I engaged in the search of Japanese agriculture, and this year's goal is solving global-scale research. Thus I decided to proceed with my research with a focus on food shortages. Food shortages in the world are mainly occurring in Asia and Africa, so I decided to study central Africa.

I investigate what is the cause of food shortages in central Africa first and I make my proposal from these.

Looking at the whole world, we produce enough food all over the world. While considering future population growth, I believe that it is essential to increase production in central Africa, where food production is scarce.

In this research, I decided to refer to the current situation in developed countries: the United States and Japan. Japan is a bad example because although it is a developed country, its agriculture is fragile due to its productivity and efficiency per land. In addition, the United States is a developed country and has a competitive edge.

As I proceeded with this study, I set sustainability, independence, and stability as goals of this study. In other words, the goal is to be sustained and profitable both now and in the future. I'm sure that an independent organization is necessary for development, because creating a large one leads to the abuse of power and to poverty.

2. Method of research

1. Make a list of agricultural forms and problems in Japan, the United States, and central Africa.
2. Organize 1 and summarize the problem.
3. Consider the ideal form of food production in its all aspect for solving the problem listed in 2
4. Consider the elements and methods necessary to realize 2
5. Find the problems and issues of 1 and 2, Re-examine

3 Discuss and implications

There are countries with food surplus and countries with food shortage. This is due to the gap between rich and poor. Food is scarce in low-income regions, where food cannot be imported. As a result, 690,000,000 people in the world go hungry despite the fact that enough food is produced. Moreover, the world population is said to increase. This means more people are going hungry in areas where food is scarce. To solve this problem, we have to solve the problem in areas where food is

scarce, not only for the present but also for the future.

In my research, I will focus on agriculture in central Africa. First, we analyze three countries: the developed countries in Africa, the United States, and Japan, which have large agricultural production and high production efficiency; the developed countries, which rely on imports; and the target countries of this research. After that, we summarize the problems and forms of each agriculture. Next, we will consider these matters.

Analysis

○ Farmland

According to Japan and the US, it can be seen that small-scale farming is less productive than large-scale farming because it cannot introduce large machinery. In addition, irregularly shaped farmland like Japan prevents the beginning of large-scale agriculture and further reduces production efficiency. I think that it is necessary to prepare the arrangements at an early stage in order to be able to carry out large-scale and advanced agriculture effectively.

○ Form of agriculture

In Japan, small farmers form cooperatives and carry out farming, otherwise in the United States, large-scale production is carried out by a small number of people using large agricultural machinery. The latter can be judged to be superior in terms of production volume and price. And the level of agricultural technology in Africa is low, so ultimately they should aim for a small number of people. I also think that when there is great progress in Africa's development and agriculture, we should move to smaller numbers. Therefore, it is necessary that they should consider changing to a small number of people and assemble the system and form of agriculture, and connect it to the future.

○ Shortening

The necessary route from distribution production to sales of agricultural products leads to cost reduction, which ultimately leads to lower selling prices.

In order to lower selling prices, it is necessary to reduce the length of route for delivering. Therefore, they should establish distribution channels such as wholesalers and promote this by constructing a market under the initiative of the government. We should improve distribution and will have a positive impact on economic aspects including agriculture. In addition, employment will be generated by strengthening the wholesale and market. This element is important because there is a shortage of jobs.

Agriculture in central Africa

○ Farmland

Farming is carried out on a village-scale, and the land around the village is used for farmland. Because the land is infertile, the land becomes unsuitable for farming after a few cultivations, so the farmland is changed once several years.

○ Form of agriculture

Farming is carried out in cooperation within the village. No machines, pesticides, or fertilizers (including natural and scientific) are used, and production efficiency is poor. Since no fertilizer is used, the land becomes infertile and becomes uncultivable in a few years. Therefore, we should change the land and do agriculture. In addition, irrigation is not progressing and agriculture is dependent on climate such as rain, weather and soil there. Therefore, unlike in Asia, where there is a lot of rain, this method does not produce stable production.

○ Shortening

Places far from cities, distribution is not established and traditional methods of distribution are used.

Therefore, it is necessary to establish the distribution of modern styles. In addition, since there are many areas of poverty and food shortages away from cities, I think that this problem must be solved.

○Farmers and manpower

Currently, farming is done in the village, so the whole village people cooperate. In order to enable them to do agriculture with a small number of people from now on, I would like to advance.

○Summarizing

Agriculture in Africa needs to be developed with a view to the future based on the experiences of developed countries. In order to make it easier to change these to the form that I aim for in the future, it is important to discuss and decide on the whole because setting goals for each field in different fields will cause misunderstandings.

Currently, agriculture in central Africa is done on a village-by-village basis. Because the farming is done manually, it cannot be scaled up in the current situation. This is because there are not enough people in the initial stage because machines cannot be used. I am planning to increase the number of people and gradually reduce the number of people.

Based on the above, in order to revitalize agriculture in each village in central Africa, several villages should cooperate as a single organization. exploration is proposed as follows. Many people are needed in the early stages of transforming agriculture. In terms of attracting people, it is not suitable for the purpose of developing agriculture in central Africa if an organization aiming for advanced agriculture pushes existing farmers into a situation, so it is necessary to gather existing farmers who use traditional methods. Since current agriculture in central Africa is done on a village-by-village basis, I think it would be better for multiple villages to work together. In this way, the food production of many villages can be improved, and the income of the villages can be expected to increase. Also, in the future, when farming with fewer people is realized, it will be possible to earn money in other ways. This will lead to an increase in the income of the village and an improvement in the standard of living. Also, from the perspective of support and technology provision from developed countries, I think that support will become easier than ever. If they continue to do small-scale farming in various places as before, a supporter from a developed country will need to go to each place and explain each time, but they can reduce the number of visits when multiple villages farming is realized. Therefore, I think that it will be useful to provide a lot of support.

From here, I will consider the form of joint farming. I think the proposal calls for a position to run the farming system. By controlling the purchase of fertilizers and tools, the timing of their use, and the type of crop, production efficiency can be increased, leading to increased production and sustainable cultivation. The person in charge of this operation must have knowledge of agriculture and be neutral with respect to all villages. Here, considering one of the problems mentioned above, that agricultural experts in Africa cannot make a profit, I think it will be appropriate to have experts carry out this operation. In addition, since experts who have the knowledge necessary for farming are not familiar with commerce, they would like to appoint two types of experts: experts in distribution and sales of agricultural products.

The second requirement is an environment in which agricultural products can be transported. In Africa today, there is a shortage of transport capacity, not just for agriculture, so it is necessary to create transport dedicated to agriculture. A lot of funds are required to transport each group of villages that have gathered in various places. Therefore, I propose establishing a company specializing in transportation, aiming to make it efficient without waste, and to transport it at a low cost. I believe this will help revitalize the local economy by reducing agricultural work for existing transporters. The transportation industry is separate from the agricultural organizations, and I think it would be better to cooperate with them.

The third is to start livestock farming. It is based on the three-field and two-field farming in Europe,

which requires farmland to grow pastures. It is thought that the appropriate use of livestock feces as fertilizer can prevent the land from becoming depleted. By adding this to the current slash-and-burn farming, we believe that it will be possible to prevent the land from being used up and lead to sustainable agriculture.

For these reasons, I propose gathering multiple village-based farms in central Africa, conducting joint farming under the direction of experts, creating a transport business specializing in agriculture, and introducing livestock farming. I think it's an effective way to solve food problems.

4. Conclusion and Future Prospects

Through this research, I concluded that it would be better for farmers to gather and farm under the guidance of experts in central Africa. I would like to find something to improve in my research and suggestions in order to sustain agriculture and increase production.

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Milk Production Related to the Environment

~Converting School Milk to Plant-Based Milk~

5320 Tsukui Yuki

Abstract

Milk production is associated with problems such as environmental issues and negative effects on dairy cows when raising them. Environmental problems include greenhouse gas emissions and overuse of land and water. In conclusion of this study, I suggest the introduction of oat milk as an alternative to school milk to decrease these effects. The purpose of school milk is to provide protein and calcium. I compared three types of plant-based milks (soy milk, almond milk, and oats milk) to cow's milk in terms of nutrition, environmental impact, and economics. Oat milk is as rich in calcium as cow's milk and has fewer negative environmental effects. However, it has the problem of low protein content and high price. I would like to take this into consideration in the future and link it to our proposal.

1 Introduction

There has been a great discussion about the pros and cons of milk production. It has been causing some negative problems such as environmental concerns and adverse effects on dairy cows during the raising process. Simultaneously, the concern about alternative milk has risen.

The present study was undertaken in order to clarify what is the most suitable drink as the alternative milk for reducing the negative effects of these problems on the earth, and to propose and disseminate it as the alternative milk for school milk. I focused on school milk because the purpose of it is for nutritional intake, and the changes in taste and appearance does not seem to have much effect, so I think it would be a little easy to switch to alternative milk. The research question of my study is "What drink is the best for milk substitute, considering the environment and nutrition?" Making use of plant based milk as alternative milk has so far been proposed as a solution to environmental problems in milk production. Some studies have claimed that plant-based milk has less impact on environmental issues, but contains fewer nutrients than cow's milk. My research is in line with this, focusing on plant-based milk, and I am going to pay attention to school milk for its dissemination. The hypothesis is that "plant-based milk, especially soy milk (plant milk made from soybeans), is the most suitable alternative milk. It's because soy milk is made from soybeans, I think, which are more widely produced and more accessible than other plant-based milk ingredients, and may have less impact on the environment during production.

I selected three types of plant-based milks (soy milk, almond milk, and oats milk) for this

study, and tested the hypothesis by comparing these three milks to cow's milk in terms of nutritional, environmental impact, and economic aspects. I'm gathering information on the Internet. Also, I research the current state of school milk around the world in order to make suggestions.

Since environmental problems in cattle production are now considered a worldwide problem, affecting the entire planet, and school milk is something that is done in a wide area, I thought it would be appropriate to study it as a global exploration.

2 Discussion and implications

Two main problems in milk production can be identified. The first is the environmental problem. Environmental problems associated with milk production include global warming caused by greenhouse gas emissions, excessive use of water, and deforestation. Cows and other ruminants emit methane gas, which has a strong greenhouse effect, during the digestion process. Methane gas is responsible for 23% of the global warming impact of all greenhouse gasses and is considered problematic because it has a stronger greenhouse effect than carbon dioxide when compared on an equal weight basis, even though it has a shorter average lifespan (about 10 years in the atmosphere). One cow releases 200 to 800 liters of methane per day as burps. Methane from fermentation in the digestive tract of ruminants is estimated to amount to about 2 billion tons (CO₂ equivalent) per year worldwide, accounting for about 4-5% (CO₂ equivalent) of all greenhouse gasses generated in the world. In addition, a huge amount of feed is used in raising cattle, and many of the fertilizers used in their production produce a greenhouse gas called dinitrogen monoxide. This indicates that dairy cattle production emits a large amount of greenhouse gasses that contribute to the global warming problem. Next, dairy cattle production requires large amounts of water. For example, it takes 1,800 liters of water for irrigation to produce 1 kg of corn, and since cattle grow up consuming large amounts of this grain, it takes about 20,000 times that amount of water to produce 1 kg of beef. It is said that each kilogram of beef requires about 20,000 liters of water. The same is true for dairy cows. The production of grains to feed dairy cows also requires large areas of farmland, which leads to deforestation and destruction of ecosystems. Deforestation is partly due to the availability of land for grazing. The second major problem in milk production is the negative impact on dairy cows. Currently, about 73% of Japanese dairy farms keep milking cows on short chains or ropes. Denmark, Sweden, Switzerland, Austria, and the United Kingdom have banned the use of constant chaining. In the UK, for example, national regulations require that tied cows must be released from their tethers at least once a day. This is more of a Japanese problem than a global problem, since the number of tethered cows is decreasing and it is assumed that only about a mere 0.3% of dairy cows

in the UK are currently tethered. Continued tethering can lead to weak legs and feet (due to lameness, flight joint arthritis, etc.) in the dairy cows. Lameness is a serious disease that causes great distress in dairy cows, and cows are more susceptible to lameness if they are tied and not given regular outdoor exercise opportunities. When cows are tied up, often with only a thin layer of matting on concrete, their front legs develop knee varus, their hind legs develop flying joint arthritis, and inflammation forms all over the joints of the body. Dairy cows that are kept in a tie-fence are susceptible to a variety of diseases due to lack of exercise and stress. Several studies have shown that dairy cows kept in tied barns are more susceptible to a disease called mastitis than cows kept in free stalls. Mastitis is a disease in which the cow's udder becomes inflamed due to bacterial infection and the cow feels pain in the udder. Research has also shown that the incidence of a disease called ketosis, which causes an abnormally high ketone level in the body due to lack of energy and other factors, leading to loss of appetite and weight loss, is higher in tie-keepers than in freestalls. These are considered to be contrary to animal welfare, which aims to provide a healthy lifestyle for livestock from birth to death, with as little stress as possible, and with their behavioral needs met. Excessive breed improvement is also a problem that needs to be addressed, as it makes dairy cows more susceptible to disease and narrows the number of breeds. Many breeds of dairy cows continue to be improved to increase their milk production. Milk is made from cow blood, and it takes 400 to 500 liters of blood to produce one package of milk. Since the breed of dairy cows produces about 30 liters of milk per day, simple calculations indicate that more than 10,000 liters of blood are pumped into the udder every day. This process consumes a lot of energy and interferes with metabolic functions, making them susceptible to disease.

These suggest that there are several serious problems associated with milk production and that the widespread use of alternative milk could have a significant impact.

Next, I examined the objectives and outcomes of school milk as a possible destination for the dissemination of milk alternatives. After World War II, GHQ (General Headquarters of the Allied Forces) decided to provide either flour or milk as aid to Japanese children who were suffering from severe food shortages. Dr. Shoji Kondo, a professor emeritus at Tohoku University, responded that he wanted milk for children's growth rather than simply to stave off hunger, since it was believed that adequate intake of animal protein was important for improving children's physical condition. In addition, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) has set a standard that 50% of the daily requirement of calcium, which is often lacking at home, should be consumed at school lunches. Research has shown that milk intake in elementary school and junior high school has an effect on bone mass, and that the higher the intake, the greater the

bone mass. This suggests that the main purpose of school milk is to provide protein and calcium intake. In Japan, the percentage of schools that provide school milk to the total number of schools (according to the "Basic School Survey" by the Ministry of Education, Culture, Sports, Science and Technology and our survey) (penetration rate) is 97.8% for elementary schools, 88.1% for junior high schools, 58.7% for evening high schools, 89.1% for special needs schools, and 93.7% overall. (The supply price (FY2048) is 50.06 yen per 200 cc (simple average, nationwide). The EU school milk subsidy system started in 1977, 20 years after the establishment of the school milk supply program in Japan in 1957. Some member countries had their own system before that. The purpose of the introduction of the system is different from that of Japan. It can be seen that the purpose of the introduction of the system is different from that of Japan. The following table is a partial picture of the implementation status of the major countries from the report on school milk conducted in 1993 (and updated in 1995) by the International Milk Promotion Group within the International Dairy Federation (IDF) in order to get an overall picture of school milk supply in the EU. The report is a partial summary of the status of implementation in major countries. The report does not yet reflect the post-reform status of the school milk subsidy system in some countries, since the EU was undergoing a drastic reform of the system.

(△: Implemented in some cases. ○: implemented in many cases, ◎: implemented in all cases)

国名(地域名)	保 幼 育 園	初等教育機関 (小学校)	中等教育機関 (中学・高校)	大 学
オーストリア	○	○	○	○
ベルギー	△	○	○	△
デンマーク	△	○	○	△
英(イングランド及びウェールズ)	○	○	○	○
フィンランド	◎	◎	◎	◎
フランス	◎	◎	◎	—
ドイツ	△	○	△	△
英(北アイルランド)	○	○	○	○
アイルランド	△	◎	◎	—
イタリア	○	○	△	—
オランダ	△	△	△	△
英(スコットランド)	◎	◎	◎	◎
スウェーデン	○	○	○	○
(日本)	△	◎	◎	—

<https://lin.alic.go.jp/alic/month/fore/1997/apr/rep-eu.htm>

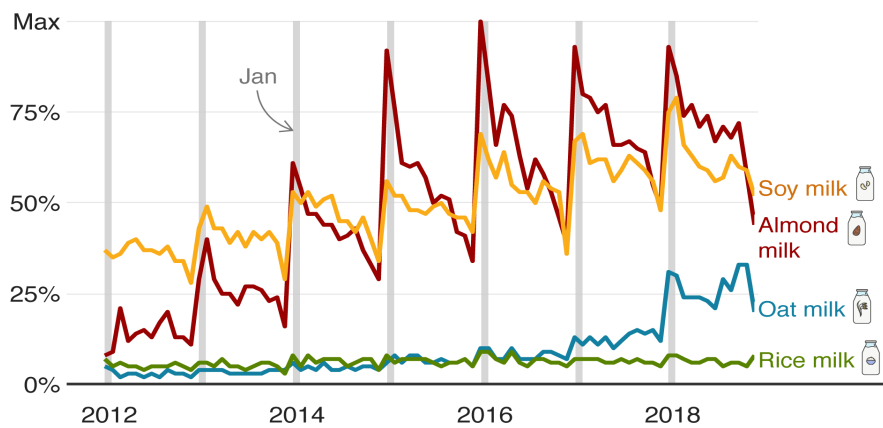
From this table, it can be seen that many EU countries have introduced school milk systems, and in some countries, nursery schools, kindergartens, and even universities. Worldwide, school milk consumption is considered to be high

Based on these considerations, we will compare plant-based milk, which is attracting attention as an alternative milk, with cow's milk and consider alternatives in school milk. Plant-based milk is a general term for alternative milk made from plant-based ingredients. While animal-derived milk is almost exclusively cow's milk, plant-based milk has a wide range, and various types are currently

available. Examples include soy milk, almond milk, oat milk, coconut milk, and rice milk. I decided to compare the first three, which we believe are relatively widespread, with cow's milk. Plant-based milk is currently attracting attention around the world due to its environmental impact, healthiness, and allergenic aspects. The following graph shows the number of searches for alternative milk in the UK.

Interest in vegan milks spikes every January

UK search interest in milk alternatives, 2012–2018



Source: Google Trends

BBC

<https://www.bbc.com/news/science-environment-46654042>

In particular, the number of searches for soy milk, almond milk, and oats milk has increased compared to the past. Furthermore, a major campaign on the introduction of milk substitutes in school milk was recently launched in Europe. ProVeg International, an organization whose mission is to "reduce the consumption of animal products by 50% worldwide by 2040," has been collecting public opinion in kindergartens through secondary schools in Europe, calling for the inclusion of plant-based milk in school lunches as well. The petition drive, which began in June, has become a hot topic of conversation throughout Europe, with approximately 50,000 signatures received in one month. In Japan, the use of alternative milk is increasingly recommended from the perspective of a disease called "lactose intolerance. Compared to Westerners, who have long practiced dairy farming, Japanese people have not consumed many dairy products, and it is said that two out of three Japanese are lactose intolerant. Lactose intolerance is a condition in which lactose cannot be digested and absorbed due to decreased activity of lactase, an enzyme that breaks down lactose, a sugar found in milk, into glucose and galactose, resulting in significant diarrhea and poor weight gain.

Three of the plant-based milks (soy milk, almond milk, and oats milk) and cow's milk will be compared in terms of nutrition, environmental impact, and economics.

First, we will compare them in terms of nutrition. The table below is a basic index of

nutrients in currently available cow's milk and some plant-based milks. However, calories, protein, and other nutrients can vary widely among brands.

Milk Type	Calories per Cup	Protein (grams)	Fat (grams)	Carbohydrate (grams)	Sugar (grams)	Price per Fluid Ounce (\$)
Cow's milk, 1%	100	8	2	12	12	0.01
Almond*	35	1	3	1	0	0.04
Oat*	100	3	4	14	3	0.07
Soy*	100	7	4	8	1	0.02
Rice*	115	1	2	22	13	0.05
Cashew*	35	0	4	1	0	0.02

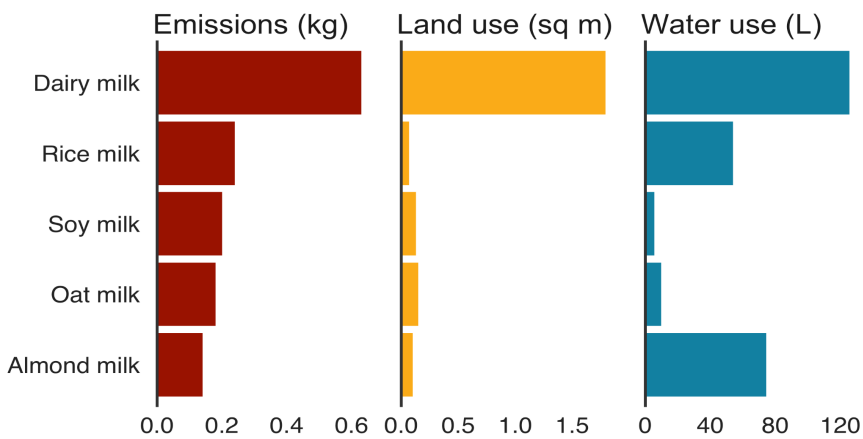
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Overall, plant-based milks are found to be deficient in protein compared to cow's milk. Soy milk is relatively high in protein and low in sugar. Among plant-based milks, it contains nutrients relatively similar to cow's milk. However, many are deficient in calcium and vitamins B and D compared to cow's milk. It is not suitable for people with soy allergies. Almond milk is low in calories, low in sugar, and high in vitamins A and E and dietary fiber, which may help prevent arteriosclerosis and lifestyle-related diseases. However, it contains very little protein and less calcium than cow's milk. Oats milk is low in sugar, rich in fiber and vitamin B, and contains as much calcium as cow's milk. However, it is lower in protein content, although not as much as almond milk. Looking at protein and calcium, soy milk contains nearly as much protein as cow's milk, almond milk has almost none, and oats milk has less than cow's milk. Soy milk and almond milk contain less calcium than cow's milk, while oats milk contains about the same amount as cow's milk. Furthermore, posters have been posted in the United Kingdom to promote school milk.

The next comparison is in terms of environmental impact. The following graph summarizes global averages for greenhouse gas emissions, land use, and water use during milk and plant-based milk production based on a study by Oxford University.

Which milk should I choose?

Environmental impact of one glass (200ml) of different milks



Source: Poore & Nemecek (2018), Science. Additional calculations, J. Poore **BBC**

<https://www.bbc.com/news/science-environment-46654042>

According to this, all plant-based milks produce less than half the greenhouse gas emissions of cow's milk, use about one-tenth less land, and use less water than cow's milk. Water use varies widely among the plant-based milks, with soy milk and oats milk using very little water, while almond milk uses more water, though not as much as dairy milk. However, each plant-based milk is also involved in other environmental issues. Increased production of soy milk is accompanied by deforestation. In recent years, much of the rainforest has been destroyed not only in the United States and Canada to keep up with the ever-increasing demand for soy milk, but also to create fields around the Amazon rainforest to grow soybeans. The production of almonds, the raw material for almond milk, requires honey bees, and in some areas, the increased production of almonds could lead to mass bee mortality. This could lead to ecological problems. In addition, almonds are produced in large quantities in California and other regions, but almond production is very water-intensive, so dryness and water shortages are becoming a problem. The production of oats, the raw material for oats milk, is not particularly associated with major environmental issues.

Next, in terms of economics, if you look at the far right side of the table above comparing the nutritional benefits of milk and plant-based milk, all plant-based milks are more expensive than cow's milk. Oat milk, almond milk, soy milk, and cow's milk are all more expensive, in that order. Since school milk collects money from students' families, the higher prices are a burden on the families.

Based on these considerations, it is clear that there are significant advantages and disadvantages to each of the plant-based milks. I considered oats milk to be the best alternative to school milk, especially from an environmental and nutritional standpoint. The main advantages of oats milk can be summarized as having a low environmental impact, not being an allergenic food,

and relatively high calcium content, while the disadvantages are that it is very expensive to produce and has a low protein content. Next, we examined the production of oats milk and the companies involved. Globally, the most famous oats milk company is Oatly, an oats milk brand created in Sweden in 1994. With the slogan "We only do oats," the company has been focusing exclusively on oats milk for more than 30 years, without handling any other ingredients such as soy milk or almond milk. Today, the oats milk brand is loved in more than 20 countries around the world, including Europe, the United States, and Asia. The company is also actively engaged in sustainable activities for a better future, such as reusing oat waste from the production process and using recycled resources for packaging materials, including caps. And this Oatly will be launched in Japan on September 20, 2022, mainly in the Tokyo metropolitan area. Since the consumption of school milk is high in Japan, we believe it is important to have a large global company, so we thought Oatly Milk would be suitable as a milk for school milk in this regard.

3 Conclusion

In conclusion, I consider oats milk to be the most suitable drink as a milk substitute for school milk. This is based on environmental and nutritional considerations. I would like to make a proposal to replace school milk with oats milk in the world (starting with Japan, I suppose). The oats milk is Oatly's oats milk, and we hope that this will lead to the popularization of oats milk. However, there are still many challenges. Oats milk contains less protein than cow's milk and is more expensive. Since one of the purposes of school milk is protein intake, ways to supplement this must be considered. The high price also places a burden on families, so ways to reduce it must be considered. Furthermore, although the taste of milk was not mentioned in this study, a drastic change in taste is not a good idea when replacing oats milk with school milk, so I must actually drink the milk to confirm the difference in taste. For this, we are considering a system of selective school milk. This system would allow students to choose between cow's milk and oats milk. In addition, it is necessary to consider whether it is possible to increase the production volume and what will happen to imports if oats milk is to be replaced with school milk. And although I have been talking about replacing oats milk with school milk, I have not yet thought about how to communicate this to the public and make it happen. These issues must be resolved in the future.

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R4/10/3

Protect your skin from UV rays

~No suncare No life~

5322 Naeki Nanami

Abstract

This prompted us to think about what we can do to help combat the rising temperatures of global warming, and we wanted to protect our skin from ultraviolet rays, which are a growing problem every year. Excessive exposure to ultraviolet rays is said to cause acute reactions, and repeated exposure to these acute reactions increases the risk of skin cancer in the future. It also has the disadvantage of causing skin disorders such as wrinkles and blotches. On the other hand, there are also advantages to UV exposure, such as suppressing allergies, regulating body rhythms, and improving sleep quality. So, first, we have considered how to deal with ultraviolet rays, capturing both the advantages and disadvantages of exposure to ultraviolet rays. And second, in light of the fact that people have many skin types, including sensitive, dry, combination, normal, and oily skin, we assumed that it would be meaningless if people used the same sun care methods. The final objective of our research was to propose sun care products that are suitable for different skin types.

1.Introduction

There are two things that can be mentioned as the importance of this theme. One is its relevance to the environmental issues of our time, and the other is the growing public interest in "skin" today. The first will be as outlined, so I will discuss the second intention. First, the survey on current skin problems revealed that approximately 20% (22.6%) of respondents answered "nothing in particular," while approximately 80% (77.4%) had some kind of problem. This result also shows the combined results for men as well as women. This indicates that both men and women are concerned about their skin. In addition, with the spread of social networking sites, information about such skin problems is becoming more and more prevalent. We can also see people trying to solve their own problems by trial and error, and actually buying and trying things out. However, the problem here is that each person has a different skin type. Therefore, even if you buy a product, it may not be suitable for your skin, and you may end up with a rougher skin. For these reasons, we focused our research on ultraviolet rays. The research question was "What should we do to solve skin problems caused by ultraviolet rays?" as our research question.

2. Discussion and implications

In 2020, 74.3% of men and women in their teens to 60s reported having problems with their skin, according to a skin problem survey by Oku Eigenji Co. In addition, research by the Japan Meteorological Agency has shown that the total amount of ozone on the earth has been increasing since 1990 to the present. Furthermore, in this day and age of the Corona Disaster, many people may be troubled by the fact that they wear masks to protect themselves from infectious diseases, which can cause skin irritation. Given this background, I am concerned that skin problems may become a major problem in the future. And this time, I have focused my research on sunscreen, a skin-related sun care product, and have learned that there are significant disadvantages to what is supposed to be a solution. Sunscreen falls under the preliminary stage of sun care when expressed in terms of sun care position, and it is a solution before exposure to ultraviolet rays. Various products, not only cream-type products but also easy-to-use sprays and gels with good elongation, are now widely available. Perhaps because of this, 80% of women and 60% of men aged 15 and over have "used" sunscreens, indicating that they are indispensable in summer. Their role is to prevent UV rays that cause inflammation, blemishes, wrinkles, and sagging, and to protect the skin from as much damage as possible. They often have a higher UV-protection effect than makeup bases, and depending on the strength of the SPF and PA, they can be used for different activities indoors and outdoors. However, one of the disadvantages is skin problems. I use sunscreens to solve skin problems and cause skin problems. My suggestion for this result is to "use a sunscreen that suits your skin type." This is because I believe that each person has a different skin type and that the problem can be solved by using the right one for it.

3. Conclusion

In conclusion, as stated in this paper, "use sun care products that suit your skin type. In fact, there are more than a few cosmetics available in drugstores and online shopping that are in line with skin type. Among them, sun care products are not widely available at present. However, the preliminary challenge is the inability to identify one's skin type. There are four main types. (1) Normal skin: Skin with high moisture content and low sebum content. Moisturized but changeable. (2) Oily skin: Skin with high moisture and sebum content. It tends to be sticky. (3) Dry skin: Skin with low moisture and sebum content is prone to becoming rough and bulky. (4) Mixed skin: Low in moisture and high in sebum. Each of the four types has its own characteristics. Because we live in an online society, it is possible to

use the Internet to find out what your skin type is. In fact, tools exist to help us determine our skin type. The problem here is that the information can be incorrect. Therefore, the question for the future is what means and methods to use to perfectly understand ourselves as a skin type diagnosis.

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Reducing CO2 Emissions by Telecommuting
~Toward Environmentally Friendly Lifestyle~
5323 MioNarahara

○Summary of Research

The research question was posed as to whether a change in the percentage of telecommuters could be expected to further reduce CO2 emissions. The current study recommended the introduction of telecommuting only for those who work in the information and communications industry. Based on data from the Ministry of Land, Infrastructure, Transport and Tourism's Policy Bureau, the average commuting distance is 10.5 km each way, which means that approximately 37 tons of carbon dioxide can be reduced. Calculations showed that Japan as a whole could reduce carbon dioxide emissions by 94.72 million tons (number of employees in the information and telecommunications industry only). In the survey study, the amount of CO2 emissions reduced by one telecommuting trip per person was approximately 1.85 kg per person. According to data from the Ministry of Internal Affairs and Communications (MIC) for the year 2020, the increase in productivity resulting from the introduction of telecommuting is expected to boost GDP by 430 billion yen. In addition, it is also estimated that the increase in employment of women and the elderly will have an economic effect of 25 trillion yen. These factors are expected to have an economic effect on society as a whole.

1. Introduction

We have considered the possibility of creating an eco-friendly community by reducing carbon dioxide emissions through telecommuting. The current study recommended the introduction of telecommuting only for those who work in the information and communications industry. The study began with the assumption that, if telecommuting and not using a private car, the average commuting distance is 10.5 km one way, based on data from the Ministry of Land, Infrastructure, Transport and Tourism's Policy Bureau, which means that approximately 37 tons of CO2 emissions can be reduced. From the results of the study, it was found that if only the number of employees in the information and telecommunications industry were extracted from that data, the entire country of Japan could reduce 94.72 million tons of carbon dioxide. Using the same method to reduce CO2 emissions in countries other than Japan, mainly developed countries, the research question was asked whether a change in the percentage of telecommuters could be expected to further reduce CO2 emissions. In the research study, the amount of CO2 emissions reduction per person per telecommuting trip was approximately 1.85 kg. It is thought that the environmental impact of car use exceeded the cost of utilities in the home, leading to an overall reduction in CO2 emissions.

2. Main Discussion and Implications

According to an estimate by Kitakyushu City, commuting by bicycle for 15 km each way for 40 years from age 20 to retirement age would reduce CO2 emissions by 50 tons compared to a private car. Based on this result, assuming that telecommuting and not using a private car would reduce carbon dioxide emissions by approximately 37 tons, since the average commuting distance is 10.5 km each way, according to data from the Ministry of Land, Infrastructure, Transport and Tourism's Policy Bureau. If only the number of employees in the information and telecommunications industry is taken out of the equation, it was found that Japan as a whole could reduce carbon dioxide emissions by 94.72 million tons. Items

where companies can save costs by introducing telecommuting include expenses related to the movement of personnel, such as "transportation costs" and "business trip costs," fixed costs such as "office rent" and "equipment costs," and miscellaneous costs such as "printing costs due to digitization. Although there are separate costs for implementation, in many cases, these costs can be reduced in the long run. In addition, telecommuting reduces unnecessary processes in business by emphasizing a paperless environment, and according to data from the Ministry of Internal Affairs and Communications in 2020, productivity gains from the introduction of telecommuting will lead to a 430 billion yen boost to GDP. In addition, it is also estimated that the increase in employment of women and the elderly will have an economic effect of 25 trillion yen. These factors are expected to have an economic effect on society as a whole.

3 Conclusion

The biggest challenge posed by this study was to resolve the question of whether the total utility and transportation costs of a single company are really less than those of a telecommuter at home. In general, lots of companies feel that the issue of utility costs is not damaging to the company in a negative way because it is often beneficial from a corporate perspective. However, the increase in electricity costs for telecommuting, if one were to work from home for 8 hours a day, would be 40-216 yen/day in summer and 41-414 yen/day in winter. According to the government's 2021 survey of private-sector salaries by job type, 23.1% of companies that offer telecommuting benefits pay telecommuting allowances. According to the government survey, the average amount of telecommuting allowance paid is 3,000-5,000 yen per month. With regard to "full- and partial-home telework" performed by companies, the use of ICT equipment and the environmental impact (CO₂) of air conditioning and lighting on the home side increased by approximately 580 kg as a result of telecommuting, but the environmental impact of the cars used for commuting and transportation exceeded and was The environmental impact of air-conditioning and lighting at home is greater than the environmental impact of the cars used for commuting, resulting in an overall reduction in CO₂ emissions. The results of the study indicate that the reduction in the environmental impact of automobiles is a major factor in the fact that the environmental impact of air conditioning at home is large but nevertheless the environmental impact reduction effect was achieved, and that in areas where automobiles are used more frequently, the environmental impact reduction effect of teleworking can be achieved.

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Education support for Africa
Bringing Education to African Children through Study For Two

ID5324 Hosono Hitomi

Introduction

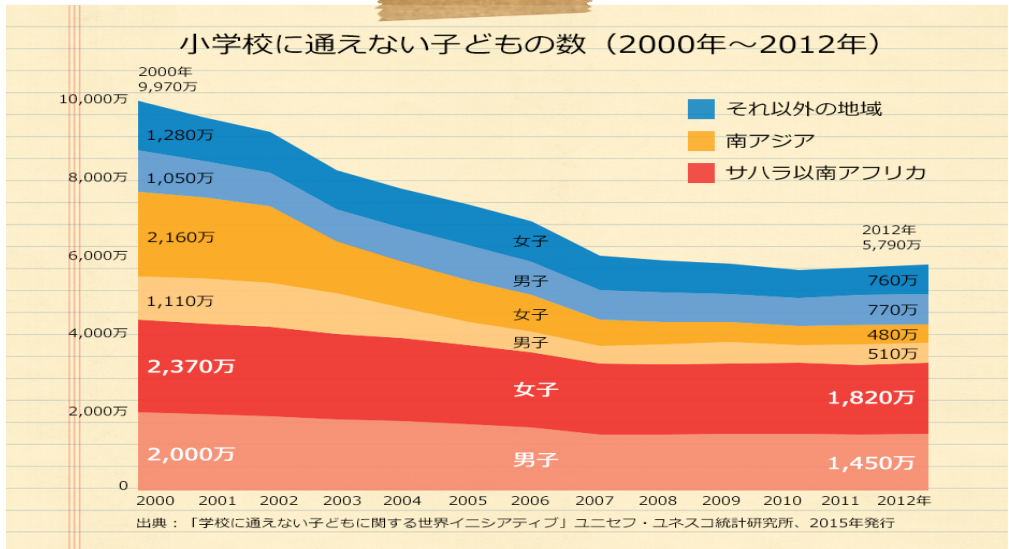
The purpose of this study is to improve education for Africa by providing textbooks that are discarded in developed countries through study for two. In developing countries such as Africa, the number of children who can receive an education is far fewer than that in developed countries. The loss of educational opportunities increases the likelihood that children will be exposed to danger, and they may be left behind by society as they become adults without adequate education. The importance of education is high because it can lead to a variety of problems. The research question is: "What is needed to deliver a fulfilling education to African children?"

Research methods

Research the Internet to find out about the current state of education in Africa and the measures currently being taken. Research the support provided by UNICEF in the past and how effective it has been; research the activities being carried out by SFT. Research the state of education in the U.S. and Japan in order to compare it with education in developed countries.

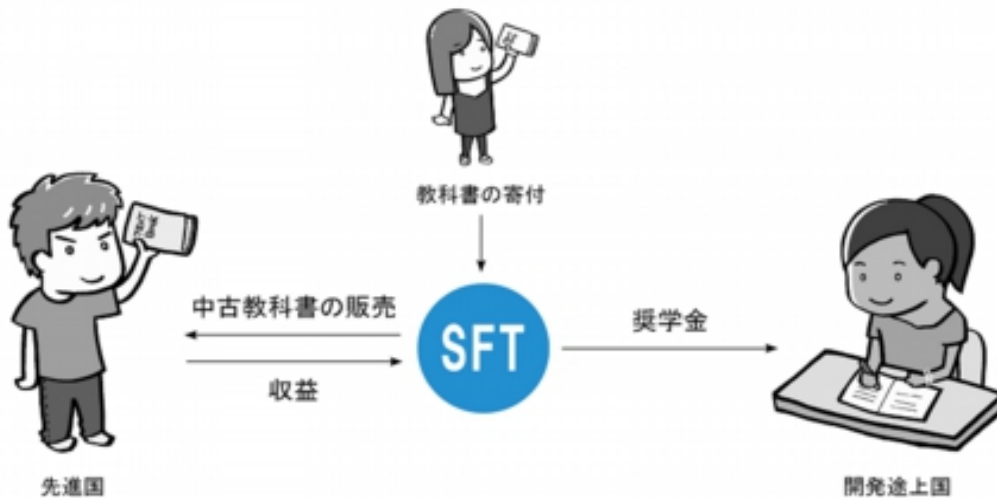
Research Results and Discussion

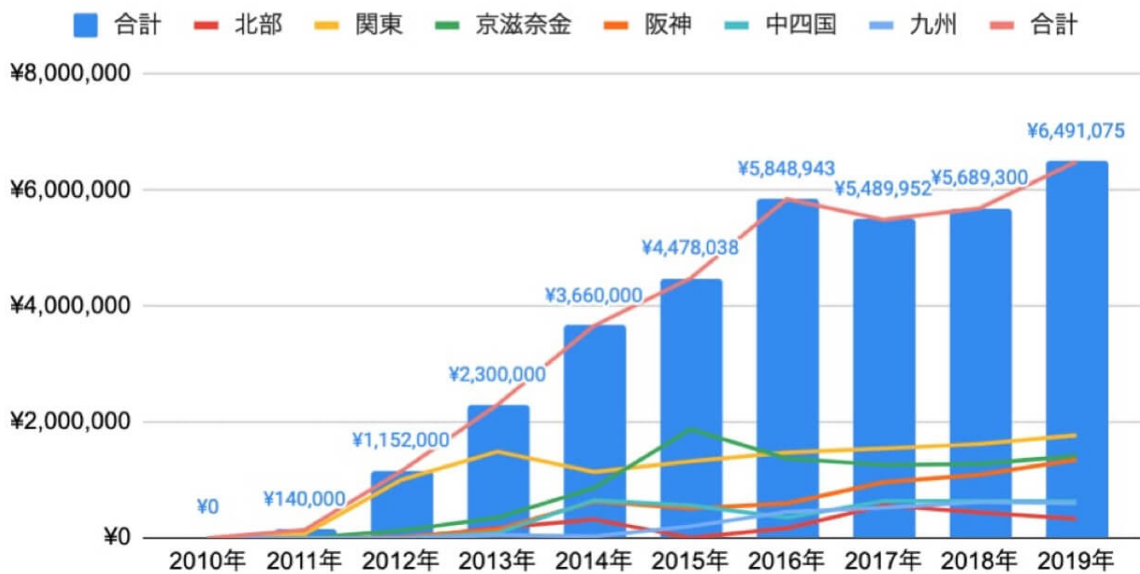
The current state of education in Africa is that more than half of all children who cannot attend elementary school are concentrated in the sub-Saharan region of Africa. One in five school-aged children does not attend elementary school. In addition, literacy rates are also low due to the lack of access to school. In Western and Central Africa in particular, the literacy rate is 69% for males and 59% for females. In order for Africa to achieve economic growth, improving literacy rates and educational standards will be a major challenge. Reasons why children are unable to go to school include working to earn money and poverty that prevents them from paying for school fees and educational materials. Conflict areas are in a situation where it is not safe for children to go to school and there is an ongoing shortage of schools and teachers. In addition, parents and local residents do not understand the importance of education. In particular, poor children are unable to study at all. Africa is also a country with a wide disparity between rich and poor. The economic disparity does not only occur in developing countries, but also in Japan and the United States where we live. Against this backdrop, UNICEF has been improving the educational environment in South Asia and many other regions since 2000. The program has improved learning and sanitation environments, and has made efforts to dispatch teachers and build schools. The number of children who cannot attend elementary school has greatly decreased, but in sub-Saharan Africa, many children who cannot attend school are still left behind.



In order to support education in Africa, I decided to donate textbooks that are used in developed countries to developing countries. To be more specific, we go from elementary school to junior high school to high school, and when we reach high school, most of us probably discard or donate the textbooks we used in elementary school. We decided to deliver the textbooks we no longer needed to developing countries, but we thought it would be difficult to donate them because of the different languages. Then, I learned that there are university students who are involved in an activity called "Study For Two. The goal is to create a world where all children who wish to study can do so. They ask university students to donate their used textbooks and re-sell them at a low price, and the profits are used to support education for children in developing countries.

In Japan, about 20,000 books are sent for used paper collection. Although the corporation purchases several percent of these books, there are many books that cannot be fully purchased and are being discarded. As part of its activities, the corporation receives donations of used textbooks, sells them to students in need in developed countries, and donates a portion of the proceeds to developing countries.





Conclusion and Future Prospects

Since it was determined that direct support is not possible due to language differences, indirect financial support will be provided through Study For Two. In order to expand the scope of SFT's activities, the scope of receiving non-textbooks will be expanded in the future. Textbook guides, workbooks, drills, etc. In order to be able to expand the program to universities nationwide, we need to seek requests from universities. We need to consider the benefits to the universities for cooperating with us. Also, we believe that more funds can be obtained by combining small-scale activities within universities into a single organization. In addition, since the gap between the rich and the poor is affecting education in Africa, I think it is necessary to return to the society as a whole.

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Ethnic Minority Literacy

To increase the official language literacy rate of ethnic minorities

5325 Misaki Hotta

Abstract

During the Meiji period (1868-1912), small-group classrooms called "Dojin Kyoikujo" were created and the literacy rate of the Ainu ethnic group increased. Because of the similar situation between Japan at that time and Vietnam, we thought it would be a good idea to introduce this activity. However, several problems arose regarding funding and cultural transmission. As a solution to these problems, we propose that universities raise funds or crowdfund a temporary fund for language volunteers in Vietnam and have university students who specialize in Vietnamese language teach the language at elementary schools in ethnic minority Vietnam for a short period of time. We also propose a cultural exchange program between Vietnam and Japan with the aim of passing on Vietnamese culture to the next generation, and for Japanese to learn Vietnamese culture. In the future, we would like to propose a method of recruiting Vietnamese volunteers to assist in volunteer activities in Vietnam, while incorporating ideas that could be introduced in Vietnam by reading articles and papers from the Philippines and other countries that are actively providing language volunteers.

1 Introduction

Last year I spent a year researching ways to improve the literacy rate of ethnic minorities in Vietnam. At the conclusion of last year's study, I made a final proposal to teach in small classrooms. However, there are various challenges to this proposal, such as funding and the disappearance of the original culture. So the goal is to resolve these issues. In previous studies, various activities were conducted to increase the literacy rate of the Ainu people in Japan in the late 1800s, and the literacy rate of the Ainu people increased significantly due to the activities of the "Dojin Kyoikujo" (native people's education center). However, the culture of the Ainu people almost disappeared as a result of these activities. Therefore, we have not been able to prevent the disappearance of the culture and improve the literacy rate. For this year's activities, I have thought that the most efficient way to solve the issues

of funding and the disappearance of culture was to dispatch volunteers. Therefore, I focused my research on students learning Vietnamese in Japan and abroad.

2 Discussion and implications

Ethnic minority issues have become a major problem in the world. The United Nations Declaration on the Rights of Indigenous Peoples, adopted in 2007, states that indigenous peoples "have suffered historical injustice as a result of colonization and dispossession of their lands, territories and resources. In other words, indigenous peoples are those who have been denied and deprived of their societies, lands, indigenous languages and cultures due to post-modern colonial and assimilation policies. This recognition is gaining ground internationally.

The Declaration of the Rights of Indigenous Peoples contains 44 articles. The most important of these is the right to self-determination. The right to self-determination is the right of indigenous peoples to determine their own political status and to decide for themselves how and what their economic, social, and cultural development should be.

However, the literacy rate among ethnic minorities is low, making it difficult for them to have a say. They also have limited access to social services. There are 1 billion such minorities in the world. In Vietnam, the country under study, the literacy rate of the Kinh, the largest ethnic group, is over 90%, while that of the Tay and other ethnic minorities is about 40%. In addition, the university enrollment rate in Vietnam itself is very low at 40%, and only 0.3% of ethnic minorities are enrolled in university. Why is it that the literacy rate among ethnic minorities is so low, despite the country's enthusiasm for education as a whole? There are three reasons: first, Vietnam has a unique educational policy that Japan does not have; second, the language of instruction is only Vietnamese; and third, the curriculum is the same as in Japan. These factors create various problems. The first is that elementary school students will not have the basic knowledge they need to enter the workforce, the second is that non-Vietnamese speakers will not be able to follow the classes at all, and the third is that they will not have time to ask questions. According to local people, questions can be asked after school, and in some areas there is a fee for this service. Therefore, those who go to school from far away, such as ethnic minorities, cannot ask questions because they have to leave school early. The second problem that I tried to solve is the fact that students can only learn in Vietnamese. Countries

where people learn in different languages due to their parents' transfers, etc., but they are unable to understand anything at all and their academic ability declines. This second problem is a worldwide problem. In fact, there are many teachers in Vietnam who can speak languages other than Vietnamese, but these talented people go to urban areas where salaries are higher.

Therefore, I would like to research the history of the rise in Japanese literacy among the Ainu people and propose a method that could be used in Vietnam. My research revealed that in the past, Japan tried many things to improve the literacy rate of the Ainu people, but all of them ended in failure.

In 1871, the Meiji government enacted the Family Registration Law, and the Ainu were incorporated as commoners. In 1872, 35 Ainu were sent to Tokyo for training. There, they learned various things, including the Japanese language, but the program ended in failure due to disappearances and illnesses during the year. In 1879, an "education center for native Ainu" was established, and this was the beginning of the Ainu School. The school educated 20 students in one classroom. After this activity, the Ainu children began to attain academic ability almost equal to that of their Japanese counterparts. One of the characteristics of this educational method is that only Japanese is used. Therefore, we thought that small-group classroom instruction using only the language they wanted to learn would be the most effective. However, the problems of funding and cultural transmission have not been solved. We thought that these problems could be solved by reconsidering the issue from the perspective of volunteer activities. Therefore, we focused on two points: universities in Vietnam and Japan, and funding activities conducted in Japan.

There are several universities in Japan where Vietnamese can be studied. The Tokyo University of Foreign Studies, for example, has several partner universities in Vietnam. Partner universities are universities and institutions with which TUFS has academic and student exchange agreements. At the partner universities, students learn four skills, conduct highly challenging activities such as creating a research project in Vietnamese, and actually have conversations with Vietnamese people. Many universities offer such activities, and it is possible for Japanese to actually interact with Vietnamese. However, there is a problem of lack of funds for volunteers in Vietnam. There are other underfunded countries where some volunteer activities are conducted, and most of them involve NGOs. Various funding methods exist. The first is the donation method. A donation is a one-time or fixed

number of donations of money or property in support of the purpose of a specific project or organization. Street donations, crowdfunding, and other solicited donations of goods such as unused postcards and used books are also donations. The second is membership recruitment. This is the process of recruiting members and charging them a certain amount of dues each month or each year. Of the two, we considered the use of donations. We thought that fundraising would be the most effective method. We thought that it would be difficult to receive continuous support because of the small number of Vietnamese language learners and the lack of exchange between Japan and Vietnam. We thought that the best way to do this would be to conduct volunteer activities as a single activity within the university. The funds required for temporary activities are small, and crowdfunding is efficient because funds can be raised from all over the world, making it easy to gather funds.

Another issue is how to pass on culture, and we believe that cultural exchange is the most effective way to do this. Cultural exchange has various advantages, including the opportunity to learn a foreign language, to understand different cultures and values, and to reflect on one's own country and oneself. The two most common reasons why cultures disappear are that they are no longer valuable and that there is no one left to pass them on. However, this method makes it possible to pass on the culture. In addition, many of the people who go to Vietnam to volunteer are interested in the country, so the Japanese side will also benefit. Therefore, we propose this method based on two points: mutual benefit and ease of implementation.

3 Conclusion

In conclusion, we propose that universities raise funds and crowdfunding for language volunteers in Vietnam, and that university students provide language instruction at elementary schools in Vietnam for a short period of time. We also propose a cultural exchange program between Vietnam and Japan with the aim of passing on Vietnamese culture. In the future, we would like to propose a method of gathering Vietnamese volunteers for volunteering in Vietnam, by reading articles and papers on volunteer activities in other countries and considering what can be introduced in Vietnam.

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Exporting Edible Insects

~Making the Best use of Domestic Brands~

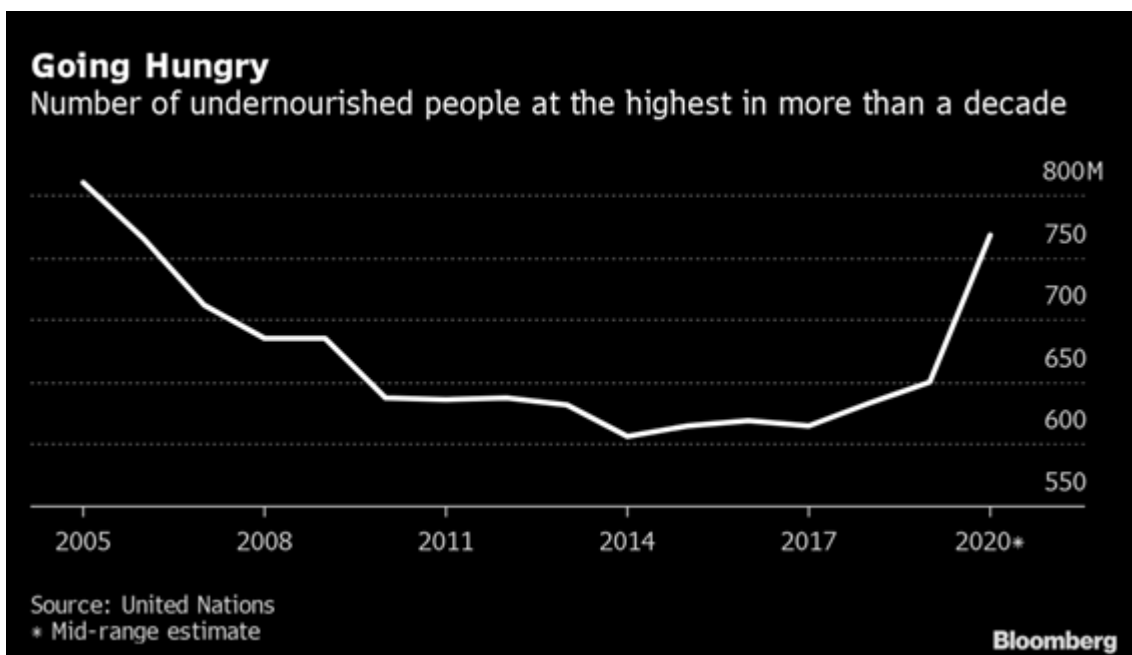
5326 Honda Oki

Abstract

I have previously researched on expanding the market for insect food in Japan, but I found it is difficult because people in Japan are afraid to eat these foods. So, consuming in Japan will not be a good solution. I think exporting to the EU is better. Last year, the EU recognized insect food as a “Nobel Food”. These days, many countries export insect food to the EU such as Vietnam, Korea, Thailand, Canada. And these countries are mass producers and account for most of the world market share. So, how can we market Japanese food insects to the world? I found the next issue is how to take advantage of domestic production. I want to suggest that Japan should industrialize the genetic modification of insects using its own technology.

1 .Introduction

Currently, food shortages are becoming an issue due to rapid population growth and climate change. The same can be said for livestock as well as grains. In addition, the population is expected to continue to grow, reaching approximately 9 billion by 2050. Also, as the figure below shows, the world's hungry population has been on the rise since FY2017. To meet the food needs of that population, about 1.5 times the current grain consumption of about 2.6 billion tons would be needed. I have been researching food since last year. Therefore, I wanted to solve this problem by relating it to food technology, which I am interested in. Currently, "Food Tech" (a coined word of "food" and "technology") such as genome editing and mass production of pesticide-free vegetables are attracting attention. And one area in particular that has been studied in recent years is entomophagy.



[Prepared jointly by the Food and Agriculture Organization of the United Nations (FAO), the World Food Program (WFP), the United Nations Children's Fund (UNICEF), the World Health Organization (WHO), and other UN agencies.]

In Japan, however, edible insects are treated as a ghetto food and are not accepted as part of the national diet. Also, locust tsukudani (food boiled in soy sauce and sugar) and bee larvae, which were eaten over a wide area until a decade ago, are no longer seen in Japan. It is difficult to increase the demand for entomophagy in Japan. Therefore, we decided to conduct our research with the goal of increasing the domestic market by exporting entomophagy.

I searched for articles in English and used them as reference research. We will investigate what kind of approaches domestic companies are taking to increase the market. I will also investigate which parts of the entomophagy production process domestic companies are currently focusing their efforts on and devising. From this, I will consider how to devise ways to export entomophagy to other countries in the future.

2 . Discussions and implications

With the United Nations predicting that the world population will reach nearly 9.8 billion by 2050, the Food and Agriculture Organization of the United Nations (FAO) has been working since 2003 to make insects edible because of their high nutritional value, including high quality protein, vitamins, and amino acids, and their low environmental impact. In order to ensure a safe and stable supply of insects, attention has been focused on their cultivation, their conversion into edible products, and the development of processed foods.

The EU Regulation on "Novel Foods (Novel Foods)" came into effect on January 1, 2018, stipulating insects as novel foods, which means that insects can be distributed throughout the EU as food products and is expected to expand the market. For the period January 1, 2018-January 1, 2019, the Finnish Food Safety Authority (EVIRA) has approved the production and sale of six types of farmed insects for human consumption. They also said that for the time being, only insects farmed in the Netherlands, Belgium, Austria, the United Kingdom, and Switzerland will be allowed to be imported for human consumption.

Let us pick up specific examples of European companies . EntoCube (founded in 2014, headquartered in Espoo) develops insect farming equipment. The company manufactures cube-shaped equipment of various sizes according to customer requirements, and the temperature, amount of water, and amount of feed in the equipment can be automatically adjusted by a cylinder developed by the company. Robert Nemlandel, an engineer at Entcube and founder of the company, said, "We initially developed aquaculture equipment in the size of a 20 cubic meter container. However, now some conventional farmers are converting to insect farming, and many thousand-square-meter buildings that were previously barns or other facilities are being converted to insect farms" . The company also wholesales farmed crickets to its partner food manufacturers to make them edible and sells them as snacks and cereal foods mixed with peanuts. Cricket feces are also sold to the company as a raw material for fertilizers, making it a truly circular economy. The company has contributed in no small way to the government's policy of promoting a circular economy, including lobbying the Finnish Ministry of Agriculture and Forestry for the approval of

entomophagy. Entcube was established at the "Startup Sauna," an NPO located on the Aalto University campus that supports startup companies. The company still has an office in the Startup Sauna's communal space.

Nordic Insect Economy (NIE) (established in 2014, headquartered in Kouvola) manufactures not only aquaculture equipment but also processors that turn insects into powder according to customer needs, which it also sells as a set with its aquaculture equipment. About 50% of its sales are exported, mainly to Malaysia and Indonesia, and it is looking for partners in Thailand and the United States. In the U.S., the company has sold prototypes of insects produced in its aquaculture facilities as snacks, including chocolate-coated insects. President Santtu Bekkeri, who also founded the company, expressed his ambitions: "We are very interested in the Japanese market, and if we can find a partner, we would like to export to Japan as well. Entcube and Nordic Insect Economy are both small companies with three to six employees founded by young people, but both have received grants from the Technology and Innovation Enterprise Fund of Finland (TEKES) and are supported by the government, which promotes a circular economy. Their future development is expected as food innovation companies that contribute to a circular society.

Fatsel Bakery, a leading confectionery and bread manufacturer, has been developing bread made with insects since the summer of 2016, and on November 24, 2017 began selling the first edible insect "cricket bread" in Finland in general supermarkets. Approximately 70 powdered crickets are used in a loaf of bread, which is 3% of the total amount of flour (including wheat flour) used. The price is 3.99 euros (about 523 yen; 1 euro = about 131 yen). In a press release dated November 23, the company said, "We want to be at the forefront of the food revolution. We want to be at the forefront of the food revolution, and with our artisanal, handmade breads we want to grow the insect bread segment significantly in the future." said Markus Hellstrom, president of the company. The author spoke with a baker at the company's bakery in a supermarket who was demonstrating and selling the bread in March. At the present stage, we cannot yet secure a stable supply in large quantities domestically, but we hope to procure it domestically in the future. According to interviews with the two companies, Entcube and Nordic Insect Economy, insect farming and sales are currently conducted in the EU member countries of the Netherlands, Denmark, Belgium, Austria, Spain, the United Kingdom, Germany, and Finland, and outside the EU in Switzerland. Switzerland is the only country outside the EU.

On the other hand, Tsukiyono Farm sells the largest amount of live crickets in Japan. It delivers live crickets to zoos, aquariums, research institutes, and universities throughout Japan, where they can be purchased by the general public. The farm is maintained in the favorable environment of a UNESCO Eco Park through an ecological environment management formation system, which allows for a stable supply of safe, fresh, healthy, and highly nutritious phytophthora and *Europaea* crickets, even in the middle of a very hot summer or extremely cold midwinter. However, this company does not market them for human consumption as entomophagy. Another well-known company that manufactures and sells entomophagy is TAKEO Corporation, which in 2022 became the first entomophagy company to win the Good Design Award for its "Tortoise Cider. The company prepares mainly heat-dried products with high-quality insect foods from overseas, and products made

from domestic insects account for a total of 18 products. However, they do not export their products outside of Japan.

From the above, it was found that European and U.S. companies, which have greatly expanded the market for entomophagy, place a greater emphasis on exports than on domestic consumption.

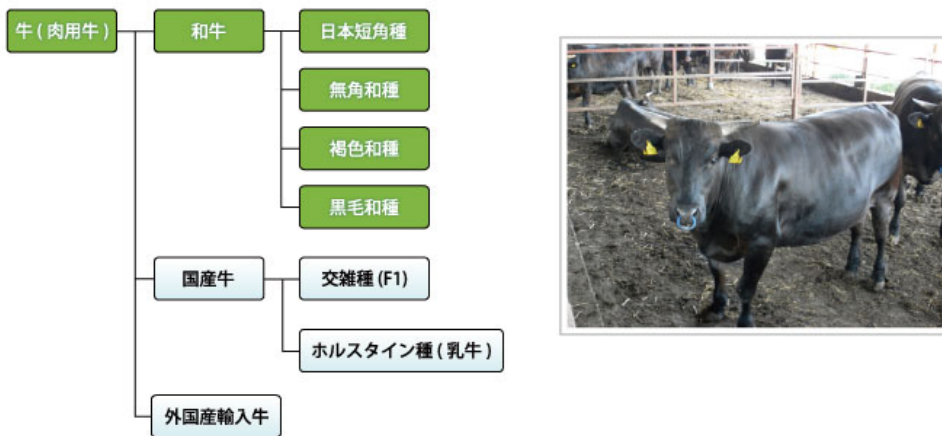
3 . Conclusions

It was found that the reason why entomophagy is tolerated in Europe is because insects themselves are not abundant due to the cold weather in many of those regions and there is no tradition of entomophagy, so there is no prejudice against insects and they are accepted purely as a food for the new age. There is also a national tendency to think logically and to see them as a solution to environmental problems and food shortages.

On the other hand, it was found that entomophagy has not taken root in Japan because of the prevailing negative image of insects as "unsanitary" and "scary looking," along with the influence of Westernization. However, it was also found that Japanese women are more voracious eaters than their male counterparts, and that when served with cockroach dishes, women eat them with amusement.

In order to create value on a global scale in the field of entomophagy, it is necessary to develop and produce safe and tasty entomophagy produced by Japan's advanced processing technology. There are two ways to trade: either dried insects are exported or processed into products. Insects from overseas are dried under intense heat and transported over a long period of time, during which time they are oxidized to a considerable extent and develop an undesirable oxidized odor. On the other hand, domestically produced insects have a fresh flavor due to their high freshness. In other words, the distance between Japan and Indonesia and Thailand, where the consumption of insects is high, is much closer than in Western countries, where exports are currently flourishing. In addition, Japanese beef is so well known in Japanese as "WAGYU" and "WAGYU BEEF" that it is eaten around the world and attracts attention. This shows that Japan's aquaculture and breeding technologies are among the best in the world. (Fig. 2) Therefore, it would be possible to produce Japanese brand insects with good taste and high nutritional value by successfully breeding and improving insects. (Fig. 3) There are several species of edible crickets, which are representative of insect eating. If more aquaculture plants are built in Japan that can provide a stable supply, it will not be long before Japan accounts for a large portion of the world's insect market.

[Fig.2]



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[Fig.3]



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TAKEO 2021 6/22

To increase Literacy rate of African countries -How do we get African children ready for school?-

5327 Yano Yuta

Abstract

To begin with, the purpose of this study is to improve literacy rates in Africa. Africa is home to many countries with low literacy rates by global standards. Because many people in Africa are unable to read or write, which interferes with their daily lives and sometimes endangers their lives, raising the literacy rate in Africa is an important issue to be addressed. In order to solve this problem, I propose the installation of wells and recharging facilities using solar panels in African schools.

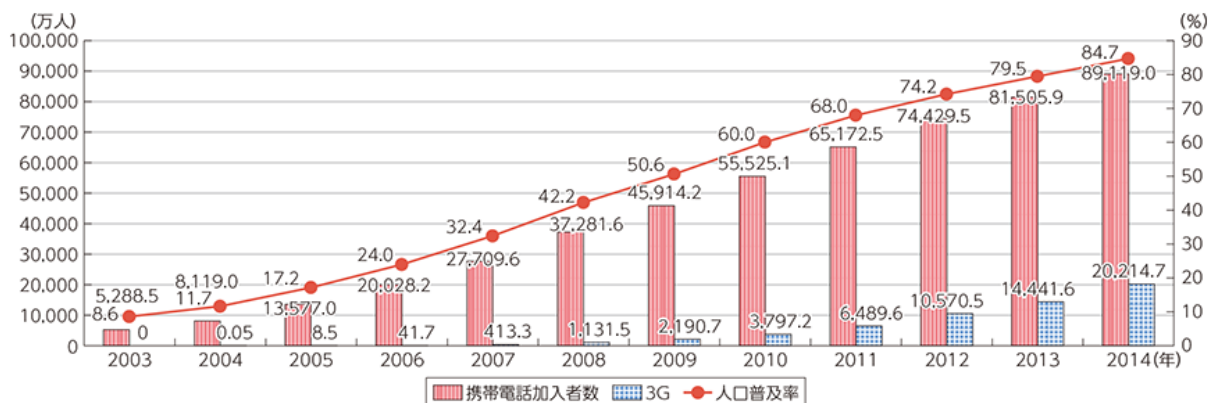
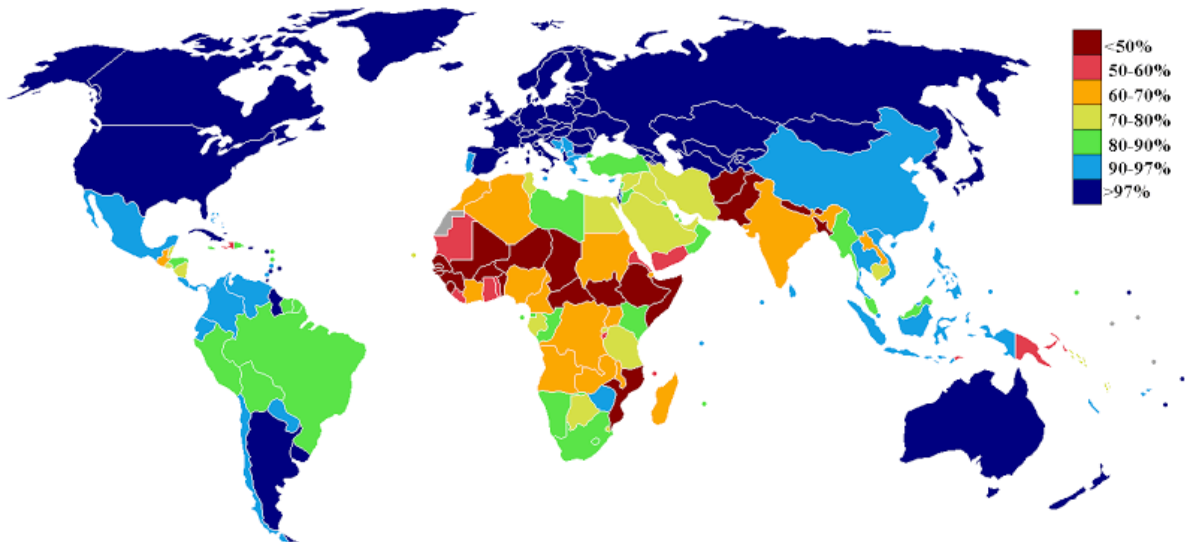
1 Introduction

To begin with, literacy rate refers to the percentage of people who can read and write in everyday life. If we look at the current world literacy rate, the value is 86%; if we restrict ourselves to the least developed countries, the value is 63%. This means that the remaining 14%, or about 781 million people, cannot even read or write in their daily lives. Illiteracy impairs many aspects of their life. For example, they are unable to escape poverty because they cannot get a job, they cannot avoid danger because they cannot read signs, and they are cut off from society because they cannot get information from the government and other sources. For this reason, I believe that raising the world's literacy rate is an important issue, and I have been conducting research to solve this problem.

2 Discussion and Implication

First, I have given African countries as the subject of this study. As you can see from the figure, the low literacy rate in African countries is particularly serious among the world's countries. The main reason why literacy rates are low in Africa is that children are not able to attend school. Schools, especially elementary schools, are important institutions where children learn the most basic things they need to know in order to succeed in society, such as reading and writing, calculation, and general knowledge. Therefore, in African countries where the number of children who cannot attend school is high, the literacy rate is inevitably low. In addition to the lack of schools, the main reasons for not being able to attend school include the need to do household chores, sometimes being forced to work, inability to pay school fees, and lack of parental understanding. I thought it was a waste that some children could not go to school even though they were available, and I considered what could be done to help them go to school. I would like to propose the installation of a well in one school and the construction of a recharging facility at the school where mobile batteries are lent by the school to the students. The first proposal is to install wells because people in Africa spend many hours a day drawing water. According to the Japan Committee for UNICEF, more than 3.3 million children in Africa currently walk long distances to carry heavy water every day. In light of this, I thought that by installing wells at schools, children could spend the time they used to spend fetching water to study at school. In addition, the amount of water needed for a child's family may not be enough for a child to bring back and forth. So how do African children do it today? It seems that they make several round trips or use animals. Therefore, we would like to rent carts and set up a place to store animals in parallel with the installation of wells. And as for the second proposal, we thought this could be a way to create meaning for parents to send their children to school. As shown in the figure, cell phones are spreading rapidly in Africa, and currently the penetration rate of cellphones is over 80%. However, the electrical infrastructure has not yet been fully spread in Africa. So how do people in Africa charge their cell phones? They go to stores in urban areas where

they can charge their cell phones and charge them there. So I thought that if schools lent mobile batteries to students and built charging facilities using solar panels at schools, children could store electricity while attending school, and this would create a meaning of going to school. And since mobile batteries can be used not only for cell phones but also for lights and other electrical appliances, I think they will be useful for children to have study time at home and to help with household chores.



3 Conclusion

Based on the above considerations, I would like to propose the installation of wells and recharging facilities using solar panels in African schools. I believe that this proposal will enable more children to go to school because it will reduce the burden of children's chores and help their parents to understand the importance of the project. Future issues to be addressed include the amount of money it would cost to implement these proposals and their feasibility. Specifically, the cost per well and solar panel, the number of wells and solar panels needed in Africa, the budget of each country, and the amount of aid that can be expected are some of the factors to be considered, so I would like to ask professional associations and governments directly. And I would also like to discuss this proposal in more depth, as we do not yet know how much effect it will have.

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New Means of Transportation Replacing the Automobile

～To reduce the progression of global warming～

15th year student, 5th grade, 3rd class, 29th place, Sota Yoshii

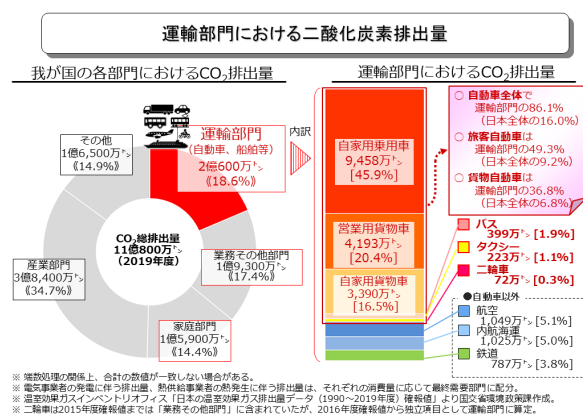
Abstract

The study's brief is to propose a new means of transportation to curb global warming. The conclusion is to introduce an LRT system and semi-mandatory shift of transportation to the LRT system. This will significantly reduce carbon dioxide emissions, thus curbing global warming.

1. Introduction

The effects of global warming are currently a major problem throughout the world. Nevertheless, the developing countries that produce a large amount of carbon dioxide, the cause of global warming, have withdrawn from efforts to reduce carbon dioxide emissions, and we believe that efforts themselves are still far from sufficient. As can be seen from the graph, the amount of carbon dioxide emissions from automobiles currently accounts for 86.1% of the total emissions from the transportation sector, which is a very large amount. I focused on this and proceeded with my research to see if I could make a proposal that would reduce carbon dioxide emissions while at the same time having no significant impact on convenience. I also thought that if I could propose a clear solution through this research. And if I could make it practical and spread it around the world, I would be able to make a great contribution to the entire world by halting the progression of global warming, which is currently the world's biggest problem.

First, public transportation systems that could be used in place of automobiles in daily life were listed, and the advantages and disadvantages of each were identified. From these, select one to focus on. (This is to avoid getting into a variety of different ones and ending up halfway through all of them.) I consider what problems could be cited if that mode of transportation were used in place of the automobile. We will also talk to related companies and investigate what problems can be raised on the company



side. I consider countermeasures and preventive measures for the issues raised in one way or another, and incorporate them into your plan. They will put together their own plan, taking into account the opinions of experts and other people. They will also simulate the problems that will arise when they expand their plans to the rest of the world. Based on the results of the simulation, the participants will then develop a plan for each region, or change the plan to one that can be applied worldwide. The procedure is as follows.



2. Discussion and implications

As a result of my research, I found that railroads emit the least amount of carbon dioxide per unit of transportation, as can be seen from the graph on the right. From this, I decided to propose a proposal that utilizes railroads. In the course of my research, I found the LRT system. In this article, I would like to focus on this system. LRT stands for "Light Rail Transit," a next-generation rail transit system with excellent features in terms of ease of boarding and alighting, punctuality, speed, and comfort through the use of low-floor vehicles (LRVs) and improvements to tracks and stops. LRT is a next-generation track-based transportation system. The LRT vehicles are comfortable with little noise and vibration, have a low, flat floor, and have almost no gap or difference in level between the platform (boarding area) and the vehicle, run on dedicated rails to ensure punctual operation, and run on the road so that they can be smoothly linked with other modes of transportation. The system runs on the road, so it can be smoothly coordinated with other modes of transportation.



transportation. Freiburg, Germany, is an example of an early adopter. Freiburg is located in the state of Baden-Württemberg in southwestern Germany and has been known as a university city since the Middle Ages. Since there is a city of the same name in Switzerland (Freiburg), the official name of the city is Freiburg im Breisgau,

named after the region. The city is located on the Rhine River, with Alsace in France on the other side of the river and Basel in Switzerland to the south, making it a border city. With a population of 190,000, Freiburg has recently been recognized as a city with the best environmental policy and is famous in Japan as the Environmental Capital of the World. Freiburg's LRT is inextricably linked to the city's environmental transportation policy: when the Black Forest (a tourist attraction in Freiburg) died in the 1970s due to acid rain, the cause was found to be the worsening of air pollution caused by exhaust gasses from increased automobile traffic, especially on highways. There was a growing movement among the citizens of Freiburg to switch from cars to walking, bicycles, and public transportation in order to reduce car exhaust emissions and protect the Black Forest, even if only for long distances. At the time, Freiburg's streetcar lines had been scaled back from their prewar scale and were running in traffic jams on narrow city streets. The city was even considering abolishing the streetcars. The city center's functions were severely hampered by road congestion, and the city needed to do something about it. Therefore, the city of Freiburg decided to restrict automobile access to the city center, strengthen the streetcar and bus system, and shift to an urban transportation system centered on public transportation. Streets in the city center were closed to cars and turned into transit malls (transit centers) where people and streetcars could go back and forth, and cars bypassed the city center by taking the ring road. In the 80's and 90's, the LRT line was extended to the western suburbs of the city, and the line network was greatly expanded. All LRT trains are now equipped with at least one nonstep entrance and exit. Freiburg is the number one city in Germany where people want to live. While the population of Germany as a whole is declining due to the birth rate, the population of Freiburg continues to grow. It is not a bedroom community for a large city. When we asked the public relations manager of the transportation bureau why this is the case, he could answer in one word: "Because it is a beautiful city. In addition to the mild climate, Freiburg has a beautiful city center with an emphasis on bicycles and pedestrians, and a convenient and inexpensive public transportation system, the LRT. Today, the LRT system is an integral part of Freiburg's transportation system. Freiburg's LRT system uses a regional commuter pass, which was introduced in 1984 to protect the environment. The regional commuter pass, which was introduced in 1984 to protect the environment, was expanded in 1991 to cover all public transportation in the Freiburg

metropolitan area. 89% of all users currently use the regional commuter pass, which costs €37.5 per month or €375 for an annual pass.

This time, I will make a proposal based on this precedent. First, we assume that the system will be introduced to Japan. In Japan, LRT systems have been introduced in Utsunomiya (scheduled to open in FY2023) and Toyama. Here, we will consider the three main objectives: ① environmentally friendly city planning, ② revitalization of public transportation, and ③ revitalization of rural areas. First, regarding ① environmentally friendly city planning, as in Freiburg, the goal is to prohibit the entry of automobiles (except for emergency vehicles such as ambulances and police cars, and vehicles that have applied for the system) into the city center after the LRT system is introduced. This is intended to reduce the opportunities for automobile use with some degree of enforcement. After all, according to human psychology, if there is a loophole, people will inevitably want to go that way, so the loophole will be closed off. However, because a sudden transition is very likely to cause confusion among residents, I'm aiming for a gradual transition over a period of several years. After the transition, I would like to make the LRT system (streetcar), bicycles, and walking the main means of transportation, with a shared bicycle service to be installed at the transit center. Transit centers are like train stations. Each transit center will serve as a transportation hub for its area and will be the foundation for people's flow lines. Regarding the next point ②, even if only the LRT system is introduced here, it is essential to link it with other modes of transportation to increase demand. Therefore, the LRT system should be able to connect to JR lines and bus lines. In this case, it is necessary to rebuild not only the LRT system but also the transportation infrastructure of the region as a whole. Therefore, the wiring of the LRT system needs to be set up with careful attention to the behavioral patterns of the people in the region. Regarding the timetable, the LRT system is expected to operate every 5 minutes during rush hours and every 10 to 15 minutes during other times of the day. Regarding point ③, regional revitalization, we believe that this can be done in conjunction with point ②, revitalization of public transportation. By activating public transportation and concentrating various urban functions such as residence, commerce, business, and culture along its route, it is necessary to realize compact urban development with a concentration of urban centers centering on public transportation. Therefore, I believe that improving access to hospitals, shopping centers, etc. is essential. I believe that this will help shift the means of transportation

from private cars to public transportation (LRT system, trains, subways, buses, etc.) and bicycles.

3. Conclusion

The conclusion is to introduce a community-based LRT system, aiming to shift the mode of transportation away from automobiles. At the same time, we would like to change the structure of the city to a compact city type and reconfigure it so that the LRT system can be used to get around facilities necessary for daily life, thereby increasing the percentage of elderly people returning their driver's licenses, reducing traffic accidents, and promoting the shift of transportation from automobiles to the LRT system. Looking ahead, I believe it is necessary to improve practical issues such as cost, timetable, and vehicle operation when actually introducing the system. I also hope to listen to the voices of actual users and create something more comfortable.

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religious persecution religion and freedom of thinking

abstract

I divide religious persecution into two situations. That from nations and that from people. Most religions that are persecuted and are not known to Japanese are the former, and some of the latter are well known to us, for example, Aum Shinrikyo. The two situations are different and very serious. We should solve the problem by finding a good way to relate to them.

introduction

The right of freedom, which is mentioned in The Constitution of Japan, has some rights, particularly the right of believing. It is said that we are allowed to believe in any religion. But many people believing in part of religion are persecuted in the world because of the subject of believing. Therefore, I decided to study it as a problem to solve in the world. I would search the internet and some literature for the religions and find the recent problems of the religions.

main article

I found [Horinko], a religion persecuted by the Chinese nation. It has at best 70 million believers. Therefore, the Chinese nation perceived it as dangerous, and persecuted it.

Another religion is Baha'i faith. Until recent years, it was persecuted by the Iran nation, but in 2010 united nations, Iran was asked to stop the persecution, and it decreased.

Nations should protect their rights actively, so nations should stop persecution. I also think that it is effective to have the United Nations ask to stop.

conclusion

As a result, it is good to adopt the solutions for the persecutions in the United Nations, or to send the solutions.

literatures

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ウィキペディア

The Difficulty of World Heritage Protection

~To protect world cultural heritage~

5402 Eito Asai

abstract

I began this study with the goal of saving the world's endangered heritage sites. In conclusion, I propose the integration of World Heritage sites into local economies, the conversion of World Heritage sites into tourist destinations, and the strengthening of education on World Heritage in developing countries. First, by integrating World Heritage sites into local economies, it is possible to instill in local residents the awareness that World Heritage sites should be protected. In addition, by supporting World Heritage sites throughout the region, we believe it will make it easier to cooperate with the tourism industry and businesses and attract tourists. Next, regarding the conversion of World Heritage sites into tourist destinations, I believe that we can take advantage of their rarity to attract tourists. Finally, regarding World Heritage education, protection activities are not progressing because World Heritage sites are not well understood. Therefore, it is necessary to convey the importance of World Heritage to children, who will be responsible for the future, through education.

1 Introduction

In my research and study last year, I learned that there are 52 World Heritage sites in the world that are threatened by conflicts and natural disasters. I thought that protecting World Heritage sites, which are precious cultural assets, would have great significance for the future development and research of cultural assets. In addition, I conducted this research last year because it also applied to my own interests. And this year, I decided to continue my research on the same theme, hoping to study what I could not understand in last year's research. The basic research method was to gather information on the Internet. In addition, we used information from last year's fieldwork at the Tomioka Silk Mill to conduct our research.

2 Discussion and implications

The problems that the heritage sites are currently facing are: the large amount of damage caused by conflicts and other man-made and natural disasters, and the lack of funds to cope with these disasters. In addition, the three problems are the poor manners of tourists. The main purpose of this research is to protect the World Heritage in Crisis. To achieve this goal, I considered two directions: fundraising and education.

First, I thought that by raising funds, we could use the money for restoration and countermeasures against damage caused by disasters and tourists. Currently, the main sources of income for World Heritage sites are the World Heritage Fund, income from national and local governments, and income from tourism. However, there is a lack of support in many areas. The World Heritage Fund is an international fund financed by the State Parties' contributions, voluntary contributions, and various donations. It is used to protect heritage in danger and to assist developing countries in registering new World Heritage sites. However, it has been pointed out that the number of newly registered heritage sites is too large to support those in danger. It is important to protect newly registered World Heritage sites. However, it would be meaningless if the number of World Heritage sites in danger were to disappear as a result of such protection. However, it is difficult to save all World Heritage sites because of the limited financial resources available for their protection. Therefore, I thought that World Heritage sites could be revitalized in a sustainable manner by integrating them into the local economy.

I also thought that by attracting tourists, a large income could be generated. As a result of my actual fieldwork at the Tomioka Silk Mill, I learned many things. In order to attract tourists, the Tomioka Silk Mill was also making multilingual and barrier-free facilities and using an app to provide tourist information. Therefore, even though it was a weekday, many people came to the site to see the sights. It also seemed that events were held regularly. Furthermore, they were restoring the facilities and preserving the landscape at the same time. The admission fee was 1,000 yen, which I felt was a little expensive, but I felt that the price was still sufficient to satisfy my needs.

Next, regarding education, I thought it was necessary to convey the importance of World Heritage sites to children by having elementary, junior high, and high schools use World Heritage sites for classes and social studies field trips. We found that there are factors that can be solved through education, such as tourist etiquette and

destruction caused by environmental development, as causes of the destruction of World Heritage sites.

3 Conclusion

In conclusion of this study, I propose the integration of World Heritage sites into local economies, the transformation of World Heritage sites into tourist destinations, and the strengthening of education about World Heritage sites throughout the world, especially in developing countries.

First, incorporating World Heritage sites into local economies will help sustain and revitalize them. Specifically, World Heritage sites should be integrated into the daily lives of residents, such as in educational settings and community centers, to make people aware of World Heritage sites. We also propose that stores, facilities, and companies in the community cooperate to attract tourists and turn the area into a tourist destination. First, ask educational institutions such as junior high schools, elementary schools, and high schools to use World Heritage sites as teaching materials. By handling them in social studies tours and classes, we can expect to generate significant income. In addition, community centers in the region can also hold exhibitions and projects on World Heritage sites. We believe that many local residents will become aware of their local World Heritage sites and actually visit and support them.

We also thought that we could generate significant income by turning World Heritage sites into tourist attractions. There are more than 1,000 World Heritage sites in the world today, and each World Heritage site has remarkable universal value. Therefore, if they are turned into tourist attractions, a certain number of tourists can be expected. Of course, as the number of tourists increases, there are problems such as the destruction and defacement of heritage sites. However, with the cooperation of local residents, we believe that this can be addressed. However, we cannot make too many changes to the World Heritage site because it would be a complete loss of value if the site loses its value as a World Heritage site even if it is turned into a tourist attraction. However, we believe that we can still attract tourists by making the area barrier-free and multilingual.

Next, regarding education, it is necessary to convey the importance of World Heritage sites to children by having elementary, junior high, and high schools use World Heritage sites in their classes and social studies field trips. This is because it

is children who will protect the future of World Heritage sites. We thought that it is very important for them to know about World Heritage sites from a young age and to feel their importance more. One problem is that developed countries have sufficient educational environments, but developing countries, for example, are not prepared to provide education. In fact, there are World Heritage sites in developing countries, and people can actually learn about them there, but there are not enough educators. There are many World Heritage sites in developed countries that have been turned into tourist attractions or are in danger due to weather disasters. On the other hand, the situation is different in developing countries, where World Heritage sites are often not protected due to a lack of understanding among residents, or are destroyed due to conflicts. It is thought that these damages can be prevented through education. Therefore, the effect of protecting World Heritage sites through education is considered to be greater than what is done in developed countries. Therefore, we thought that educational activities in developing countries should be further promoted through support from developed countries and the economic measures mentioned above.

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Solving the Shortage of Pharmacists

—Effective Training in Developing Countries—

5404 Ayaka Ishikawa

Research Abstract

Last year, when I was researching how to solve the shortage of pharmacists in Africa (I narrowed down the target area to Madagascar in the second half), my friend asked, "Isn't it possible to create a system where you can receive a salary while you are still in school?" I got some feedback and thought it was a great idea.

Therefore, this year, in order to train pharmacists in developing countries, I thought about a system that allows students to receive a student allowance while attending school. When I thought about getting a student allowance, I thought of referring to the National Defense Academy of Japan.

1 Introduction

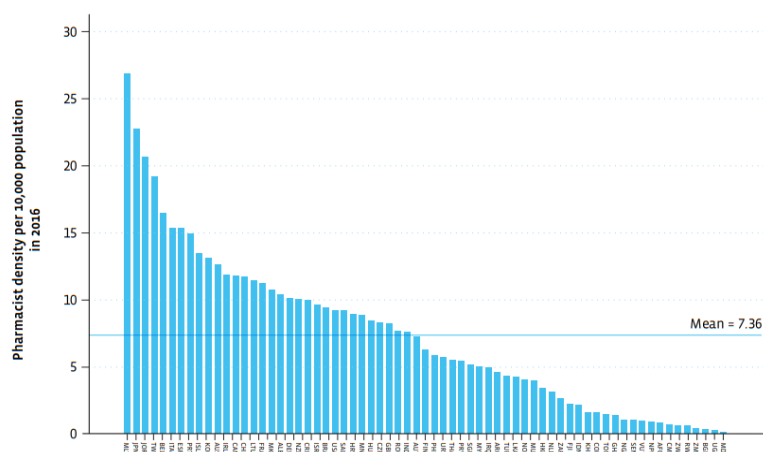
In developing countries, mainly in Africa, the shortage of doctors, nurses, and pharmacists has become a problem. The profession of pharmacist plays an important role in developing countries where the number of doctors is small relative to the population and access to appropriate medical care is difficult. Residents seem to rely on pharmacists, who are more accessible than doctors. Also, in developing countries, there are few people who have knowledge about medicine, and counterfeit medicine is often sold. In such a case, a sufficient number of pharmacists who are specialists in medicine must be secured. In addition, the shortage of pharmacists is thought to have a negative impact on educational activities for infectious disease prevention and drug inventory management. The purpose of the research is to avoid these situations by advancing the training of pharmacists.

In order to train pharmacists, creating a school like the National Defense Academy in Japan where students can receive a student allowance while attending school will lead to school shortages, child labor, money shortages, natural disasters, conflicts, shortages of teachers, and inadequate facilities. I thought that I could solve the reason why African children do not go to school, such as the low understanding of education.

2 Discussion and implications

First, "which country has a shortage of pharmacists?" In terms of the number of pharmacists per 10,000 people, Japan has the second highest ratio of pharmacists in the population as of 2016, but it was found that there is considerable variation depending on the country. From the bottom of the graph, they are Madagascar,

Figure 2a: Pharmacist density per capita in 2016 by individual countries



Uganda, Bangladesh, Zambia, and Rwanda. The current situation is that there are people who cannot receive appropriate medical care due to the shortage of medical personnel such as pharmacists in low-income countries.

In last year's research, I aimed to introduce a pharmacy technician system and advance the mechanization of pharmacies. First, regarding the pharmacy technician system, it takes years of school to become a pharmacist, but up to two years to become a pharmacy technician. Also, the cost to become a pharmacist can range from \$65,000 up to \$200,000, while the cost to become a pharmacy technician is \$500 to \$5,000. It saves a lot of time and money. However, it was believed that pharmacy technicians could only demonstrate their abilities under the supervision of pharmacists, and that the goal of increasing the number of pharmacists would not be achieved. Secondly, the mechanization of pharmacies is difficult under the financial circumstances of most developing countries, and it is unthinkable to seek government assistance. And there are areas with few medical facilities outside of urban areas in the first place, so there is almost no profit to be gained by improving the operational efficiency of pharmacies. With that in mind, the idea of mechanizing pharmacies was abandoned.

According to the Japan Committee for UNICEF, the reason why children in Africa are not attending school is

- (1) The number of schools is insufficient for the number of children
- (2) Children work to support the family budget
- (3) They can't pay their tuition and teaching materials
- (4) Effects of natural disasters such as droughts and floods, and humanitarian crises such as conflicts
- (5) There is a shortage of trained teachers, and the quality of classes is poor
- (6) School facilities are inadequate
- (7) Parents and local residents do not understand the importance of education

There are seven such.

Focusing on reason (3), I wanted to create a system to exempt tuition fees. Speaking of universities in Japan where tuition is exempted, it is the National Defense Academy. So what is the National Defense Academy? According to the website of the National Defense Academy, various characteristics are written, but the biggest characteristic is that students are special national civil servants, tuition exemption, clothing, food and housing are covered by the government. Moreover, the student allowance is about 110,000 yen per month. Furthermore, it is possible to select a variety of major fields, including 3 fields of humanities and social sciences and 11 fields of science and engineering. Although there are points that are the same as ordinary universities, it is not an ordinary university where you can receive a salary (student allowance) (and there are bonuses twice a year). In addition, all students of the National Defense Academy live in dormitories and live a regular life. (Wake up at 6:00, morning assembly at 8:00, go to bed at 22:30, etc.)

After graduating, he will be an officer of the Self-Defense Forces. Ground personnel, sea personnel, and air personnel are appointed as Ground Self-Defense Officers, Maritime Self-Defense Officers, and Air Self-Defense Officers, respectively. Entered the officer candidate school of each defense force as an officer candidate.

Athletics... About 9 months of educational training at officer candidate school

+ about 3 months of regular course training
→Appointed as a senior Self-Defense Force officer about a year after graduation
Maritime... Approximately one year of education and training at Officer Candidate School
→Appointed as a senior SDF officer
Aviation... About half a year of training at officer candidate school
+ about half a year of military service

→Appointed as a senior Self-Defense Force officer about a year after graduation
As a similar system, some nursing schools exempt scholarship repayment by working for a certain period of time at a designated hospital after graduation.

It is thought that in areas where the medical system is not well-equipped, there are not enough well-equipped facilities in the first place, and there are few experts with knowledge.

3 Conclusion

In order to solve the shortage of pharmacists, create a school like the National Defense Academy to train pharmacists. Funding is needed to make this idea a reality. In the case of the National Defense Academy, the government supports students in various ways, and many of the original funds are covered by taxes from the people. However, this is only possible because Japan is a country with a relatively high standard of living, and the same cannot be done in the developing countries that I am considering. In the first place, it is necessary to collect a large amount of funds to establish it, and on top of that, it is necessary to cover the students' clothing, food, housing and salaries. I thought about collecting funds through crowdfunding, etc., but even if they do, I don't think it's possible to foresee the future if they continue to rely on support.

Therefore, I came up with a new idea for a correspondence university.

According to the Correspondence Education Association of Private Universities, correspondence education was institutionalized by the School Education Act in 1947, and was approved by the Ministry of Education in 1950. It has been practiced for over 70 years with the needs of those who want to learn. Also, in April 1999, the graduate school began offering distance learning for the master's course, and in April 2003, the doctoral course began. University distance learning, which allows students to study while balancing work, is expected to develop more and more in the future as an educational institution where anyone can learn anything, anytime, anywhere. Currently, 42 universities, 26 graduate schools, and 11 junior colleges have opened their doors, and about 240,000 people nationwide are studying according to their learning motivations.

In other words, university distance learning is a formal university curriculum that attempts to meet the expectations of those who have a love of learning but find it difficult to realize their goals due to geographical and time constraints. It is open as a stage for re-learning and lifelong learning for working adults.

Also, according to Cyber University, a correspondence university is an educational system created in response to the learning needs of people who cannot commute to campus to study while working. In Japan, there are people who graduate from high school, become working adults, and study at correspondence universities in order to get a degree and advance their careers. The learning method is centered on textbooks and face-to-face classes in which students attend classes at a university for a certain number of times or for a certain period of

time called schooling. You can study at your own pace by minimizing the time spent commuting to school. Correspondence universities are also approved by the Ministry of Education, Culture, Sports, Science and Technology, so graduates are awarded a bachelor's degree. Another major attraction is the low tuition fees. Since they do not go to school, there are no facilities or transportation costs.

Correspondence universities seem to have four methods of registration: regular course students, auditing students, subject-specific courses, and special courses. According to the Association of Private Correspondence Education,

① Regular student (regular course)

Those who aim to graduate from a university or junior college

A university entrance qualification is required for admission.

② Auditing students (credited students)

Those who wish to upgrade their already acquired teacher's license to an advanced certificate, require a license for another subject, or wish to acquire a subject that has not been completed in the teacher training course at the previous school.

③ Subject-specific registration (non-degree students)

Those who study for professional knowledge and education

Students can freely select and study some of the subjects offered in the correspondence course.

④ Special students (credited students)

Those who do not have university entrance qualifications.

There are also correspondence universities overseas.

I would like to propose the creation of a correspondence university where there is not much need to create facilities, and overseas pharmacists can give classes as instructors, take classes remotely, and do homework etc. when there are no classes. However, there are still issues such as the improvement of the communication environment, which need to be considered in the future.

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Development of iron-fortified vegetables

~How to solve anemia with iron-fortified vegetables~

5405 Miku Okmaura

Abstract

I have been searching for this study since last year to solve anemia. I researched how to decrease the number of anemia trying to solve anemia caused by training in sports. The purpose of this study is to reduce the number of people who have anemia by raising vegetables which contain a large amount of iron. I'll say iron-fortified vegetables in this study, no matter what countries, cultures, religions, or what they eat in their everyday lives. In my opinion, we should cultivate iron-fortified vegetables and send them to developing countries. Countries with many high levels of anemia are mainly developing countries, and this is due to nutritional shortages resulting from food shortages. In addition, as I continued in my research, I learned that there was a study about growing iron-fortified rice in the Philippines. This study showed me the idea of growing iron-fortified vegetables. In the cultivation of iron-fortified rice in the Philippines, rice was used as a material. However, from a global perspective, there are not many countries where rice is the main food, and I thought that in developing countries where food is in short supply. Therefore, I wondered if the technology of iron-fortified rice could be applied to vegetables. Because Japan is the only country that currently has this technology, we should take it to developing countries that have surplus land and cultivate iron-fortified vegetables. In return, the developing countries will receive a portion of the iron-fortified vegetables they have grown. Through this exchange, we believe that trade can be established between developing countries that do not have much to give and developing countries that do, and that this trade lead to the promotion of health successfully.

1.Introduction

I have two goals for this study. First thing is to reduce anemia all over the world as much as possible. And this study will promote and spread people about iron-fortified vegetables to improve the balance of nutrition all over the world.

2.Discussion and complication

First, I would search on the Internet for research aimed at improving anemia in daily life, and look for something that I could apply to my research. Then, I will contact the company named "Farm Do" and ask them about the difficulties and hardships they encountered in growing the new type of vegetable and how they developed the new type of vegetable. Based on these, I will consider how I can make the cultivation of iron-fortified vegetables.

3.Conclusion

First, I will introduce about pre research. In the Philippines, iron-fortified rice was harvested and fed to children aged 6 to 9 years. As a result, they succeeded in reducing the percentage of anemic people. In addition, five female college students made an iron cooking

instrument into the shape of eggplant to take iron in India, and made a presentation in front of village women in Allahabad district. They held a cooking class with iron eggplants. In Vietnam, an intervention study of iron-fortified fish sauce was conducted with 152 anemic women. The Result was an increase in hemoglobin levels. However, the result of study is limited so there is no suggestion which is spreading all over the world. In addition, most of the countries where research has been conducted are relatively developing countries, and the elimination of anemia in developed countries is not considered a global issue. There are many countries where rice is not a staple food, and even if it were being spread, we don't believe that it would have a global effect. Therefore, I thought that if iron could be taken from vegetables, anemia could be decreased at a global scale. Instead of using rice, I came to the conclusion that iron-fortified vegetables should be cultivated.

In addition, there is a product that allows cooking rice with increased iron content just by mixing. The product is called "New Gen Supplement Rice," which was released by House Wellness Foods Co. The product is said to provide nutrients with regular rice and cooking it together. Although the product has developed, it is not well known and the results of the experiment have not been applied to a large extent.

Therefore, I would like to propose iron-fortified vegetables. Iron-fortified vegetables are vegetables fortified with iron, like iron-fortified rice. I have also concluded that it would be a good idea to grow these in developing countries and provide them in return. In addition, I have two ideas for growing iron-fortified rice. One is to cultivate using an iron pot, and the other is to feed it some fertilizers containing a lot of iron. I believe that these efforts will increase the iron levels in the vegetables we grow.

Assignment from now on is to search the mechanism of iron reinforcement rice, and to consider if we can apply that skill to vegetables. Especially, how to make iron reinforcement rice is made up of a technical field, and it is hard to understand. So I want to search for details little by little.

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MSDマニュアル家庭版

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ネスレ 鉄欠乏貧血への取り組み

To get rid of the use of automobiles

~Further improve bicycle infrastructure and ensure safety of bicyclist~

Chuo secondary School 15期生 5年 4組 6番 Yuta Ozawa

Abstract

We have to stop global warming which is caused by CO2 emission from cars. I have researched how to increase the use of bicycles and decrease the amount of CO2 emission from cars for two years. Therefore, I collected information on current bicycle usage rates, previous studies, and policies in countries where bicycles are widely used to make suggestions. As a result, I concluded that two things are necessary to make bicycling easier: (1) improve bicycle infrastructure, (2) ensure the safety of bicyclists. Specifically, regarding (1), existing bicycle paths should be connected and redeveloped to create a trunk line of bicycle paths so that users can travel to their destinations in as comfortable an environment as possible. A navigation application should be also created. Regarding (2), the goal is to improve the knowledge and skills of users by holding training sessions for the general public.

1 Introduction

Now, Global warming is a serious problem all over the world. According to the International Energy Agency (IEA), automobiles account for about 25% of this emission. However, considering that most of the energy for electric vehicles to be used in the future will come from thermal power generation and that the number of car users in developing countries is expected to increase, it is difficult to say that this is a fundamental solution to reduce CO2 emissions. emissions, and the growing number of car users in developing countries.

In addition, using cars also creates the problem of urban congestion. Especially before the coronavirus epidemic, when cities around the world were experiencing increasing levels of congestion. This problem of traffic congestion has led to an increase in accidents and a decrease in the livability of neighborhoods, so we can say that it is a problem that needs to be solved as soon as possible. Besides, as mentioned above, as the number of car users increases in developing countries, it is obvious that the damage caused by this congestion problem will increase.

In order to solve these problems, I have been researching the use of bicycles, which I have always been interested in, with the aim of reducing the use of automobiles. Specifically,

I studied how to make it easier to use bicycles for commuting to school or work, and how to create a system that combines bicycles with other forms of public transportation.

Using bicycles also has the advantage of reducing gasoline and maintenance costs that would otherwise be spent on a car, as well as reducing the need for physical exercise.

Most previous studies have examined the role of bicycles in urbanization in the past, but such studies have not provided detailed policies or constructive proposals regarding modern transportation infrastructure. This study aims to propose a plan to encourage more people to use bicycles for commuting to work and school.

2 Discussion and implications

I have continued this research since last year, and last year I mainly researched the initiatives and issues in countries around the world where bicycles have become more popular.

During the first semester of last year, I mainly used the Internet to gather information. I researched and discussed the status of bicycle use around the world, the number of accidents, and the problems of bicycle use in recent days.

In the summer vacation, we visited a cycling road (Takasaki Isesaki Bicycle Path) and interviewed a general store. On the Takasaki Isesaki Bike Path, we compared the pavement and size of the path with that of ordinary roads. During the interviews, the participants were mainly instructed on the use of rain gear and bicycle preservation.

And during the second semester, we concluded our research based on the information we gathered during the first semester and summer vacation. We also re-collected information and exchanged opinions through the seminars that accompanied the study. However, last year's research did not go well and I was unable to make concrete proposals because it focused on the world .

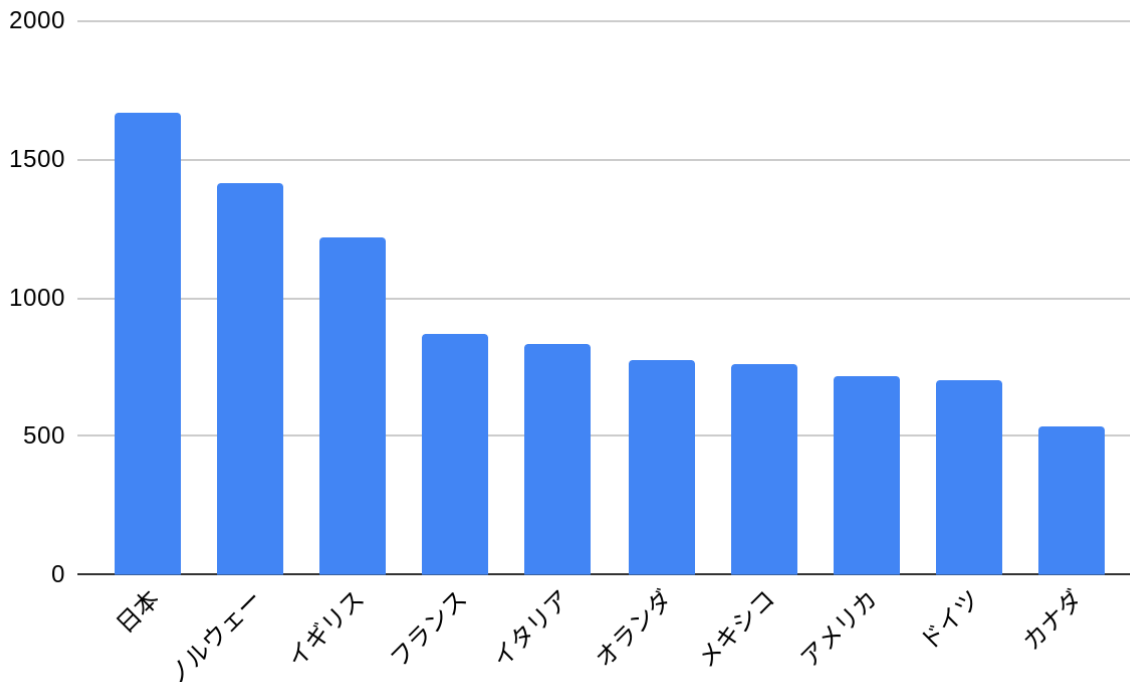
Therefore, in this year's research, we decided to first focus on Japan to make our proposal more concrete, and then expand the scope of our research to the rest of the world.

During the first semester of this year, we mainly studied information about Japan, which we had not researched much last year.

Before I started this research, I considered the major disadvantages of bicycle use and thought that (1) there is a lack of bicycle infrastructure (2) Many accidents have occurred and

safety is not ensured and (3) it is difficult to use bicycles in rainy weather. I then considered solutions for each of these problems.


First, I considered the issue of (3) the difficulty in using bicycles in the rain. However, I found that there is no reasonable solution. Therefore, I thought that there are two conditions that make it easy to use bicycles: (i) less rain and (ii) flatter roads.















↑World precipitation (mm)

On the other hand, however, the top countries where bicycles are actually popular are rainy regions such as Japan and China, indicating that there is little correlation between conditions that make it easy to ride a bicycle and the rate of popularization.

● 世界各国の二輪車普及率(1台当たり人口)

 単位:人

2020	インドネシア	2	
2019	マレーシア	2	
2018	タイ	3	
2020	ギリシャ	6	
2018	イタリア	7	
2014	スペイン	9	
2014	スイス	10	
2014	オーストリア	11	
2020	日本	12	
2020	ドイツ	13	
2020	オランダ	9	
2020	中国	20	

Next, I considered the issue of (1) the lack of bicycle infrastructure. We define that bicycle infrastructure is the provision of bicycle paths and other zones that are easy for bicyclists to use, systems for connecting with public transportation, the number of bicycle parking spaces, and the availability of bicycle signage in this study. I first looked at countries with widespread bicycle infrastructure.

○About initiatives in Advanced Bicycle Countries

•Germany

In Germany, bicycle paths are built everywhere, including main streets in the city and residential areas in the suburbs. And also they are designed in various ways, such as converting one lane of the roadway into a bicycle path and painting intersections in red.

There are also many bicycle parking lots, and infrastructure has been developed to make it easier for cyclists to use the roads. Furthermore, in Germany, bicycles are mainly connected to trains, so that bicycles can be placed in specific spaces on trains. This method makes it easier for bicycles to travel long distances and across cities. This is due to the fact that since the 1970s, Germany has been promoting energy conservation and the introduction of renewable energy sources throughout the country because of the nuclear power plant accident and the growing momentum for environmental protection.

On the other hand, despite the fact that bicycle parking is available everywhere in Germany, a large number of bicycles are illegally parked in the city, obstructing pedestrian traffic.

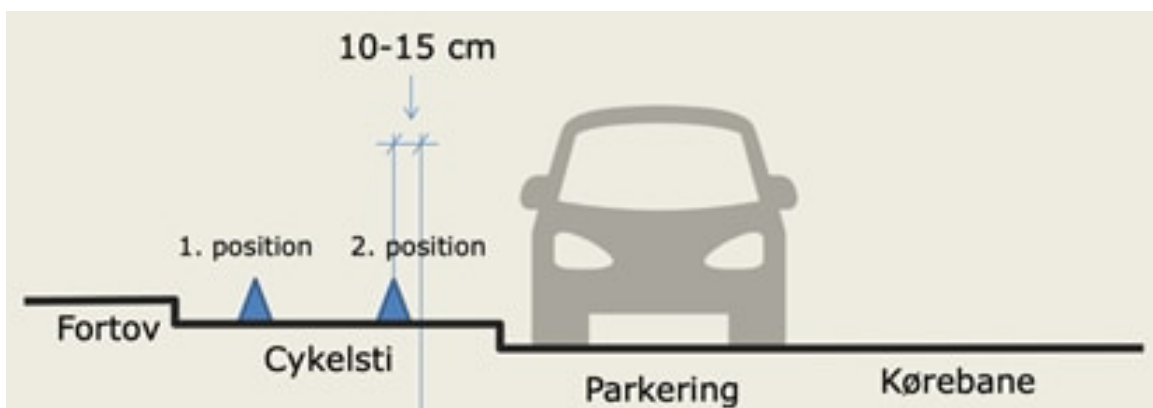


↑colored bicycle traffic zone

↑bicycle parking in town

•Poland

In Poland, they also have bicycle paths like Germany, but in addition, Poland is working to reduce the number of involuntarily accidents between cars and bicycles and between bicycles or pedestrians by changing the height of bicycle traffic zones (see figure below). In addition, Poland has also installed traffic signals specifically for bicycles and requires drivers to give hand signals to other drivers and cars to thoroughly reduce the number of accidents.



↑Poland is changing the height of the bicycle traffic zone

•Netherlands

In the Netherlands, bicycles have long enjoyed a certain level of usage due to the flatness of the land. However, a movement for a safe cycling environment due to accidents between automobiles and bicycles, and doubts about the sustainability of automobiles created by the oil crisis have led to urban development with bicycles as the main infrastructure. As a result, bicycle infrastructure such as bike lanes and bicycle parking lots are in place throughout the city, and in addition, schools in the Netherlands provide education on bicycle use rules and manners. Because of these activities, Netherlands has the environment that makes it easy and safe to use bicycles.

Next, we researched Japan, which is the subject of this year's research.

•Japan

Japan is one of the highest countries in the world in the number of bicycles owned per capita, but the bicycle infrastructure is inferior to that of Europe and the United States. First of all, the number of bicycle lanes is small, and the quality of these lanes is poor because many of them are narrow and set directly next to the roadway. However, this is due to the 1970 revision of the Road Traffic Law, which allowed bicycles to ride on sidewalks, and the construction of sidewalks that were designed for both pedestrians and bicycles. In addition, bicycle parking is scarce, and is not often found in areas of high demand, such as downtown areas and shopping malls, and is only available in front of train stations.

3 Conclusion

First, in case of issue (1), I suggest that more bicycle zones need to be more developed. All of the above-mentioned advanced bicycle countries have established bicycle lanes both in the city and in the suburbs, so Japan needs to follow their lead. However, unlike these countries, Japan has not developed its cities with bicycles in mind, and it is difficult to build new bicycle lanes except for large-scale renovation and redevelopment. Therefore, I propose that instead of setting up bike lanes on all roads, some major roads should have bike lanes to create arterial roads with bike lanes. This will reduce construction costs and time, and will also ensure safety since the bike lanes can be placed on roads where there is as much space as possible.

I also suggest the creation of a dedicated bicycle navigation application. In these countries I mentioned, there are signboards in the streets indicating the main destinations of cyclists. Specifically, we would like to provide information on bicycle traffic zones and the location and availability of bicycle parking spaces, as mentioned above.

Second, in the case of issue (2), it is difficult to ensure the same level of safety in Japan due to space limitations compared to bicycle lanes in developed countries. In addition, in most advanced bicycle countries, the wearing of helmets is mandatory or a matter of etiquette, so from these perspectives, we believe that training sessions for the general public are essential in Japan.

In the future, we would like to consider how to take advantage of the benefits for users and how companies and local governments can provide support.

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The camera voyeurism of female track and field athletes

～so that female track and field athletes can run freely～

5407 Odajima Saki

abstract

This year's study looked at the treatment of perpetrators, with a primary focus on reducing the number of perpetrators. Athlete voyeurism, which takes place in public places and is difficult to control. Of these, this time I focused on athletics, using my own interests and experience, and arrived at a solution: the treatment of perpetrators. Athlete voyeurism is becoming more difficult to solve due to social networking services. Through my research, I suggest that more people should be informed about the correct use of SNS. In this day and age, many people use SNS without knowing the correct way to use them. Therefore, they may become criminals without realizing it, which leads to an increase in the number of criminals, and victims.

1, Introduction

I have researched this topic since last year. But the point that I changed from last year is to focus on the treatment for the assailant. Last year I suggested that we should make new laws about voyeurism and restrict taking pictures and videos at the museum.

2, Main article

I suggest we should spread the right knowledge about the use of SNS.

First, I will introduce the voyeurism of the athletes. In this study, the voyeurism of the athletes is to take pictures of the track and field athletes to use and spread on SNS.

One of the causes of the problem is SNS. These days, we can share the pictures with a lot of people easily for free. Thereby people's awareness of crime goes down. And on the internet, there is the idea that the athletes who wear such a uniform are bad.

By the way, I will tell you the reason why the track and field athletes wear such a uniform called separate uniform. The track and field athletes try to run fast under gravity. So light things can move faster than heavy ones. In order to move the body in a large and light way, separate uniforms have become popular. Some athletes say that the separate uniforms have improved their times by about 0.1 second compared to the former running shirts, although it also affects the mentality of the athletes. So it has spread to students.

Another reason this problem has been difficult to solve is that it is difficult to distinguish between athlete voyeurism and ordinary photographers or people taking photos or videos as family members or friends. As an example, at a stadium, people who were considered to be a group of ordinary photographers were all taking voyeuristic photos. They seemed only to take pictures as a member of the athlete's family.

Recently, as a countermeasure, we have been talking to suspicious people, but they lie and say they are guardians, which is becoming meaningless. Furthermore, camera technology has recently developed, and some people use ultraviolet cameras to make their uniforms transparent to their skin tone, taking pictures that look as if they are naked and posting them on SNS. Once a photo is posted on a SNS, it is not easy to know who posted it and who spread it, and it is also difficult to delete the spread photos. In many cases, the victims have had their athletic careers affected. At the level of a prefectural track and field meet, anyone can enter the stadium for free, so it is easy for anyone to take pictures of the athletes.

while let's look at the criminal side . Most criminals are habitual offenders. Voyeurism is a thrilling experience because the offender does it without being noticed, and once they experience success, they cannot stop. In addition, athlete voyeurism is less risky than general voyeurism because it targets athletes in the stands who are wearing clothes, so it is harder to be detected. Furthermore, with the spread of SNS, stolen photos can be posted on SNS for free and traded for a high price. In fact, even now that the problem is gradually becoming well-known, photos of innocent athletes are easily traded on social networking sites at high prices. Based on these facts, most criminals are addicts, and the problem will not be solved unless the addiction of the offenders is treated in order to reduce the damage. In addition, in this age of easy access to everything through SNS, an increasing number of junior and senior high school students have become perpetrators without realizing it due to lack of knowledge, and this has led them to commit crimes.

The significance of this research is that it will not only reduce the number of victims who suffer from the inability to practice and perform as expected due to athlete voyeurism, but also save the perpetrators (excluding some unrepentant perpetrators and junior and senior high school students who started crimes with the intention) who want to quit but have difficulty in doing so.

3, Conclusion

First, we must increase opportunities to treat the addictions of perpetrators in order to reduce the damage to perpetrators who are habitual offenders. Since few people know about

voyeuristic disorder and the fact that some perpetrators are currently struggling with the fact that they too are committing crimes again without realizing it, we propose that this knowledge and the current situation be spread. We believe that by spreading this knowledge, people in the world will become more aware of the perpetrators' treatment and make new choices, thereby reducing the damage, even if only a little. We also propose that schools provide opportunities for junior and senior high school students, who easily and unknowingly become criminals through SNS, etc., to learn about SNS usage and sexual crimes in order to avoid increasing the number of such students in elementary and junior high schools. We thought that this opportunity would lead to a solution, even if only a little, by increasing the number of people with correct knowledge about the surprisingly vague boundaries between what is acceptable to do on SNS and crimes, and the problem of addiction that offenders are facing.

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Rehabilitation for the elderly that can be done alone

Proposal for the system that can send information to the doctor in charge using a game device

5408 Hayato Kato

Abstract

Today, a major problem is the shortage of caregivers due to the aging population. Therefore, I began my research with the goal of proposing a method of rehabilitation that could be performed by a single person. I also wanted to propose a system for transmitting body movements during rehabilitation to a doctor. First, I hypothesized that VR goggles could be used, and as a result of my research, I found that there were various types of VR goggles, but not all of them were suitable for this research due to their price and features. Next, I thought that a better method might be to project the image onto a television, and I considered Amazon's Fire TV stick as a method. However, I expected that it would not be able to capture body movements and that data transmission would be difficult. I concluded that I could use the Nintendo Switch's Joy-Con functionality. The problem is that the price is too high, so I would like to consider a solution.

1 Introduction

Right now, there are very good things happening in the world, such as medical development and economic stabilization. However, from another perspective, a major problem is occurring: the aging of the population. It is not hard to guess why this is happening, but when I think about it again, I can see that aging is accompanied by a decline in physical abilities and the ability to think. If this trend continues, there may be a shortage of nursing homes and other facilities. So I thought it would be a good idea to provide them with rehabilitation services that they could do on their own. But there were some problems. For example, the doctors would not know if the patient could do it by himself, how to teach the patient how to do it, and how well the patient could actually do it. I thought that if a gaming device like VR could be used, the movements could be captured and the rehabilitation could be done while observing the actual movements, so it could be done by one person.

Since I could not find any previous research, I decided to proceed on my own.

As a method, I will examine several gaming devices, such as VR devices, and find one that is more suitable. If not, I will look for alternatives.

2 Discussion and implications

First, there are three main types of VR goggles. There are those that attach a smartphone to the goggles, those that connect to a PC and output video, and stand-alone types (VR goggles that can be used by themselves). Each is summarized below.

i Smartphone-mounted VR goggles

Characteristics include: less expensive than other types, can be used with a smartphone, and require VR goggles that match the size of the smartphone.

ii PC-connected VR goggles

Characteristics include: connected to a PC via an HDMI or USB port, relatively expensive, compatible with many VR games and contents, dependent on PC specifications, etc.

iii Stand-alone VR goggles

Characteristics include: can be used as stand-alone VR goggles due to built-in battery and display, use by connecting to wi-fi, simple game operation is possible by attaching a wireless type VR goggles exclusive controller, more expensive than other types, etc.

However, it is not suitable for this study because it can only detect head movements and cannot capture body movements, which is the purpose of this study. Similarly, ii, which requires an expensive PC, would not be suitable for this study. In other words, III would be better, but iii also requires a PC to download software and is difficult to use. In the end, VR goggles proved unsuitable for this study.

Next, I thought about what else could be done, and I thought it would be a good idea to have the participants practice by projecting the images on a TV.

There are several ways to project video onto a TV, and one that I considered was the Fire TV stick from Amazon. This product can be used by simply plugging it into the HDMI port on the TV and connecting it to Wi-Fi. This might be a good idea since it would allow us to watch Youtube on the TV, but since I did not know if elderly people work properly, I thought it was not very appropriate.

I thought a home video game console, especially Nintendo Switch, would be a good choice.

Nintendo Switch comes with a controller called the Joy-Con, which has an accelerometer and a gyro sensor. The game "Ring Fit Adventure" uses this controller to judge body movements and determine whether the patient is exercising or not, and it is expected to be possible to rehabilitate the patient alone and send the data to a doctor using a monitoring function, etc., as considered in this research.

3 Conclusion

2 Discussion and implications of this paper suggest that it may be possible to use the Nintendo Switch's Joy-Con. However, there are several drawbacks.

First of all, it is expensive. The Nintendo Switch has three models.

The Nintendo Switch Lite model does not include the Joy-Con, so it cannot use this research.

The other two are eligible, but the Nintendo Switch EL model costs 37980 yen (including tax) at MSRP, and the regular model costs 32978 yen (including tax). This is a price that is hard to pay.

The second problem is whether or not it can be operated.

A possible solution to this problem is to sell the product to families with three generations living together. In this way, children can play with it, so it can be sold at a high price, and the family can teach it to the elderly even if they do not know how to operate it at first. However, this would not apply to the elderly who are truly "alone". This is an issue that will be studied in the future.

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Water in Africa

-To ensure clean and safe water-

5409 Rei kinoshita

1 Purpose of the research

During my second-year FEWC, I conducted research on "Gunma's water". At that time, we had tap water as a matter of course and did not find many problems with the water quality in Gunma. However, I chose this theme because I thought I could find a solution to the problem of water quality in Gunma, since there are people all over the world who do not have running water and are drinking water that is not clear. I decided to continue with this theme because I had also studied water in my fourth year and ended up in the middle of my research.

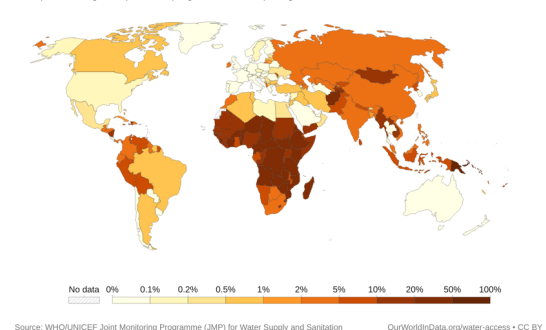
2 Research Methods

- To learn about the current status of water in Africa.
- To study the environment of plants in Africa.
- Find materials in Africa that may be useful for filtration.
- Summarize how to make a filtration device based on materials in Africa.
- To disseminate this information to the world.

3 Research Results to Date

During my senior year, I researched the state of water in the world. I found that 2.2 billion people around the world do not have access to safe water, and 4.2 billion people do not have access to safe and controlled toilets. Of these, just under 900 million people did not even have access to safe drinking water, and Africa was the most water-contaminated region in the world. The World Health Organization (WHO) defines inadequate access to safe water as a lack of access to a place where each person has access to 20 liters of water per person per day within 1 km. It is astonishing that there are less than 900 million people who do not have access to safe water, but improving this situation will not only save more lives, but also improve the school enrollment rate by allowing children who are always out fetching water to go to school, improve the social status of women, and lead to economic development. Therefore, I thought about the water situation in Japan before the water supply system was established, as the situation may be similar to that in Japan before the economic development. Before Japan had a water supply system, people in Japan used well water. Therefore, I thought that wells could be constructed in Africa today to ensure clean and safe water. In my research, I found that there are several types of wells depending on their shape and depth, and each has

Share of the population without access to an improved water source, 2020
Improved drinking water sources are those that can deliver safe water. They include piped water, boreholes or tube wells, protected dug wells, protected springs, rainwater, and packaged or delivered water.



different construction methods and costs. In other words, the cost of constructing a well can only be determined by examining the topography of the well site, the depth to which groundwater is released, and the hardness of the ground. However, the topography and groundwater conditions in Africa could not be found on the Internet. In addition, I knew that assistance regarding wells had already been provided and that there was infinitely little new I could do. Therefore, I decided to try to solve the problem not with a well, but with something else. One idea was to build a filter. If I could make a filter with materials available in Africa, I would be able to drink clean water at any time. We found that if we made a filter by hand, it would be divided structurally into three stages. From the top, there is a pickle stone layer, a filtration layer, and a spillage prevention layer. The pickle stone layer is mainly made of pebbles, and the filtration layer can use charcoal for filtration. The last layer, the runoff protection layer, is mainly made of leaves. After researching whether such leaves are available in Africa, I thought that coffee leaves would be the best choice. I propose that these details be made into a book and delivered to Africa.

water as a lack of access to a place where each person has access to 20 liters of water per day within 1 km. It is astonishing that there are less than 900 million people who do not have access to safe water, but improving this situation will not only save more lives, but also improve the school enrollment rate by allowing children who are always out fetching water to go to school, improve the social status of women, and lead to economic development. Therefore, I thought about the water situation in Japan before the water supply system was established, as the situation may be similar to that in Japan before the economic development. Before Japan had a water supply system, people in Japan used well water. Therefore, I thought that wells could be constructed in Africa today to ensure clean and safe water. In my research, I found that there are several types of wells depending on their shape and depth, and each has different construction methods and costs. In other words, the cost of constructing a well can only be determined by examining the topography of the well site, the depth to which groundwater is released, and the hardness of the ground. However, the topography and groundwater conditions in Africa could not be found on the Internet. In addition, I knew that assistance regarding wells had already been provided and that there was infinitely little new I could do. Therefore, I decided to try to solve the problem not with a well, but with something else. One idea was to build a filter. If I could make a filter with materials available in Africa, I would be able to drink clean water at any time. We found that if we made a filter by hand, it would be divided structurally into three stages. From the top, there is a pickle stone layer, a filtration layer, and a spillage prevention layer. The pickle stone layer is mainly made of pebbles, and the filtration layer can use charcoal for filtration. The last layer, the runoff protection layer, is mainly made of leaves. After researching whether such leaves are available in Africa, I thought that coffee leaves would be the best choice. I propose that these details be made into a book and delivered to Africa.



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Protect Ecosystem from Plastics
-promote "reduced plastic lifestyle" everyone can carry out-

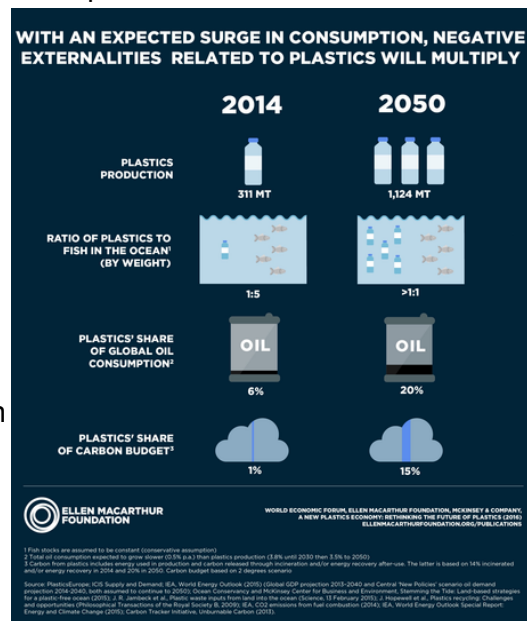
5410 Sara Kiotabashi

oAbstract

Recently, the impact of marine plastic debris on ecosystems has become an issue of concern around the world. It is impossible for us to live without plastic. Though considering the impact of plastic on marine life, the possibility of plastic entering the human body through marine products, and the possibility that larger events may occur due to bioaccumulation and other effects, it is essential that we take measures to protect ourselves from the effects of plastic.

Therefore, the aim of this study is to reduce the amount of plastic in the ocean and to provide information on measures that the general citizens can take on a daily basis. Research was conducted via the Internet, field surveys, and interviews.

Currently, various measures are being taken in Japan and abroad, but there are not many measures that we can take. Therefore, I propose to focus on the "reduced plastic lifestyle". I conducted this research with the three objectives of reducing the amount of plastic discharged into the ocean, promoting alternative materials and their weighing in stores, and disseminating and popularizing the "reduced plastic lifestyle". The following is a brief summary of the research.



1 Introduction

The main motivation for my research was to read an article entitled "Marine Plastic Exceeds Fish Weight, Raising Concerns About Human Health Effects from Bioaccumulation." I was struck by the fact that the problem of marine plastics has a significant impact not only on the environment but also on human beings. According to a study prepared by the Ellen MacArthur Foundation in cooperation with the World Economic Forum, at least 900 million tons of plastic and 800 million tons of fish are expected to be floating in the ocean by 2050. One reason is that the use of plastic has increased since 50 years ago. And the amount is still growing.

But why is plastic such a problem? It is because plastic has many effects, including threats to marine life, adverse effects on fisheries, adverse effects on tourism, and long-term effects on the human body. I decided on this research theme because I felt a sense of urgency about this problem that will have a great impact on our lives in the future.

Looking around us, we can see how many plastic products (especially disposable plastic containers) we use, and it would be impossible for us to live without them. However, considering the impact of plastic on marine life, the possibility of plastic being introduced into the human body through marine products, and the possibility that larger events may occur due to bioaccumulation and other effects, it is essential that we take measures to deal with these issues.

Therefore, I have been conducting research on this theme since the year before in order to bring these problems as close to a solution as possible. I have focused on the "reduced plastic lifestyle," which I discussed in my research last year, with the three objectives of reducing the amount of plastic discharged into the ocean, promoting the use of alternative materials and their weight in stores, and disseminating and popularizing the "reduced plastic lifestyle". The research was conducted with the following three objectives in mind.

2 Discussion and Implications

According to the Ministry of the Environment's website, approximately 60,000 tons of plastic are discharged into the ocean every year, and marine organisms die as a result of accidental ingestion. Also, it is said that when humans eat such marine products, the plastic is taken into their bodies and can cause serious health problems. In addition, the cost of disposal is very high, which places a burden on the economy. According to the Japan Plastic Recycling and Reuse Association, waste plastic accounts for 5% of the total volume of general waste, but the cost of processing it accounts for 32% of the total, and the processing cost per ton of waste is 31,000 yen/ton, compared to 174,000 yen/ton for containers and related materials. Of this amount, the cost of "other plastics" is extremely high at 262,000 yen/ton.

As the table below shows, in Japan, the cost of marine plastic waste disposal was 1138,215 million yen in fiscal year 2008, when the total budget was 977,128 million yen, accounting for about 1.3% of the total.

Before starting a life of plastic reduction, I looked into the following problems of plastic in the world. For comparison purposes, we compared the production and recycling rates of plastic and the amount of plastic discharged as waste from the perspective of three categories: (1) developed countries, (2) emerging countries, and (3) developing countries, to understand the current situation. The three categories were (1) G7 member countries, (2) BRICS, and (3) least developed countries.

Although the latest data could not be obtained, the total volume of global plastic production as of 2019 was 368 million tons. According to the Japan Plastics Industry Federation, China is in first place, followed by the U.S. in second place and Germany in third place, accounting for about 40% of total production. Japan is in fifth place, accounting for about 5% of the total. Overall, most countries that produce are either developed or emerging economies, with the total production of many developing countries located in Africa and the Middle East at only about 10 % of the total.

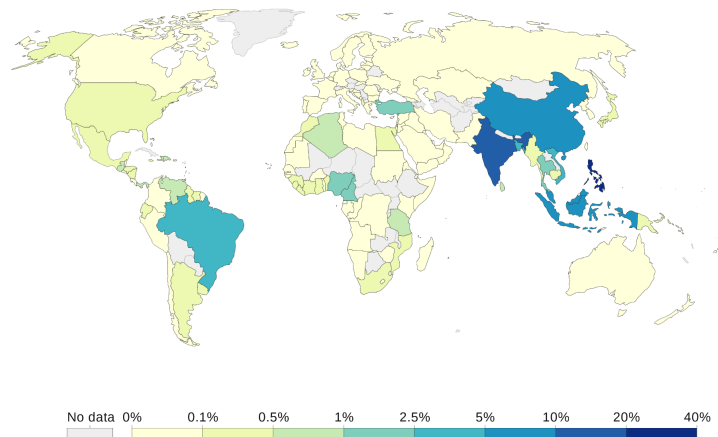
In 2019, the total amount of disposable plastics discarded worldwide was 130 million tons. By country, China and the United States were by far the largest producers (those two countries account for about 1/3 of the total), followed by India in third place, Japan in fourth, and the United Kingdom in fifth. In terms of consumption, the impact of developed and emerging countries is very significant.

As of 2017, only 9% of plastics were recycled. In addition, 60% of all plastics ever produced are discarded and end up in landfills or the natural environment. None of the mass-produced plastics are biodegradable. However, sunlight weakens the material and causes fragmentation into particles. Against the backdrop of growing global concern about plastic pollution, the first survey, which aims to promote optimal production and use of the resource, found that Germany ranked first and Japan second. The survey evaluated the entire lifecycle of plastics in each country and measured, compared, and verified them as a

plastics management index. Overall, the study found that Europe leads in plastics management efforts, while Asia, which accounts for half of the world's plastics production, lags behind.

From these three perspectives, it appears that the main production and consumption of plastics takes place in developed and emerging economies, but that proper treatment is far from being achieved.

Share of global plastic waste emitted to the ocean, 2019



Source: Meijer et al. (2021). More than 1000 rivers account for 80% of global riverine plastic emissions into the ocean. Science Advances BY

Here is a look at where and how much plastic is actually being discharged into the ocean. Most of the countries with the largest amount of plastic discharged into the ocean are emerging economies. Asian countries in particular account for 80% of the global total.

They account for 80% of the world's total. The World Economic Forum estimates that the number one plastic spill is China, followed by Indonesia, and then Southeast Asian countries such as the Philippines and Vietnam. Asian countries often reuse waste plastic due to cost, importing degraded plastic from other countries for reuse and eventual disposal, but in 2017 China banned plastic imports and Thailand is in the process of tightening its regulations.

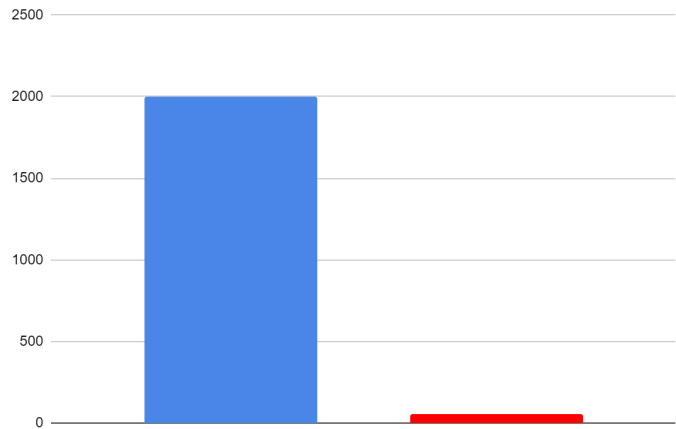
From this, it appears that while the amount of plastic produced, consumed, and disposed of without oceanic runoff is higher in the developed and other countries, the developed countries are doing less with respect to oceanic runoff, suggesting that some measures are being taken to address this issue. On the other hand, we examined in detail what causes such a large amount of plastic to be discharged into the oceans in countries marked in blue. The causes of plastic being discharged into the oceans are due to our lifestyle and weather conditions, but most of the plastic is discharged from the land, so it is important to reduce the amount of plastic discharged from the land.

Based on this, we looked at the measures that are currently being taken in our neighborhoods, and found that although a nationwide fee for plastic bags will begin around July 2020, not all people will be required to use eco-bags, so the change will be in the form of a fee rather than abolition. Although there are no clear figures, "It is difficult to reduce the amount of ocean plastic by charging for plastic bags. It is insufficient in terms of effectiveness to meet the current social environment," said the Japan Federation of Bar Associations. In addition, the current situation is that plastic bag fees have resulted in the elimination of garbage bags used by households, and the actual production of plastic bags has increased.

I therefore propose a "reduced plastic lifestyle. Since it was introduced in NHK's program, I decided to practice the concept, and from there, I made the promotion of weight-based sales as another proposal and thought about what is necessary to spread the concept.



減プラ生活1週間でのプラスチックごみ量の変化



Through practical experience, I could reduce 95% of the amount of plastics.

I found problems in implementing this initiative in Japan. These include a lack of available information, too much plastic packaging, and a lack of environmentally friendly stores.

Based on my experience, the first solution to realize my proposal is to disseminate information on how to promote the "reduced plastic lifestyle". In fact, SNS advertising can be highly effective in attracting customers by using the right media, as each media has different user attributes. Recently, an increasing number of users are using SNS instead of using search engines such as Google or Yahoo! when conducting research, so it can be used to attract a wide range of customers. In addition, advertising on SNS is an excellent means of disseminating information because it is easily seen by users. Next, I think it is important to develop and utilize apps. This is to support people who are interested in the "reduced plastic lifestyle" to actually engage in it. When I practiced it, not only the small amount of information, but also the source of information tended to be a specific person distressed me. Thus I thought it necessary to consolidate and transmit more information. Therefore, I would like to refer to the "Pilika" garbage pickup application. This is a social networking application for litter pickers operated by Pilika, Inc. I believe that it will be easier for people to reduce plastic waste by developing an application that not only introduces environmentally friendly supermarkets and organizations that conduct volunteer activities related to plastic waste, but also provides useful information by people who are trying to reduce their own plastic waste. In addition to information dissemination, we believe that it will be easier to engage in this activity.

In addition to information dissemination, we also considered fundamental problem-solving measures to make it easier to eliminate single-use plastics and engage in a plastic-reduction lifestyle, which was the second solution we proposed. This is the use of alternative materials and the promotion of weight-based sales. In terms of plastic bags, it is difficult to use alternative materials because the cost of plastic bags is higher than that of plastic bags and the demand for plastic bags is still low. Another difficulty in converting to alternative materials is the increased cost of materials and the loss of transparency characteristic of plastic. There is also a disadvantage to selling by weight. One of them is that one has to go to the store in person. With the proliferation of online stores, the younger generation, in particular, can now

have food and daily necessities delivered to their doorsteps from the comfort of their own homes. Besides, weighing increases the amount of shopping luggage because one has to carry containers to the store, and while it is easy to compare quantities and prices if they are in packs, not doing so may cause food loss.

3 Conclusion

Although various measures are currently being taken in Japan and abroad, there are not many measures that we can take. We believe that by spreading the "plastic reduction lifestyle" and creating an environment that facilitates such efforts, we can reduce the amount of plastic discharged by the general public on land and contribute to a reduction in the final accumulation of marine plastic litter.

On the other hand, with the spread of the new coronavirus around the world, the demand for one-way plastic is increasing and it has become indispensable. I would like to focus my future research on this issue as well, as it seems necessary to propose a proposal that will allow my research to be used in a wider range of areas while taking these global conditions into consideration.

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Protect The World from Earthquakes
~With Using Japanese Technology~
—Earthquake Overseas —

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○**Abstract**

Japan is a quake-prone country. Japanese architectures had been made a lot of effort to protect buildings from earthquakes since long ago. However, there are earthquakes in some overseas countries. This research's objective is to protect people from earthquakes in the world. Some earthquakes have caused damage in developing countries, and the damage has been extensive. In Haiti, in the Caribbean. A massive earthquake hit the area in 2010 and 2021, causing numerous casualties and damage to buildings. Damage to buildings is particularly severe, and there are many human casualties as a result. I thought it necessary to provide assistance using Japanese construction techniques.

I Introduction

Earthquakes have also occurred overseas, and the damage of them often becomes more extensive than in Japan. To make matters worse, it is difficult for aid from outside the country to reach the country in the event of an earthquake. I turned my focus to Haiti. It is located on a plate boundary, just like Japan. So earthquakes of magnitudes exceeding 6 on the Richter scale are frequent. The Haitian state is responsible for its inability to cope with high-frequency earthquakes. One of the vulnerabilities to earthquakes is the lack of building strength. Buildings made of reinforced concrete have also been destroyed. Different proportions of concrete used and shoddy rebar are causing this. Reinforced concrete requires advanced techniques and delicate construction. However, in Haiti, a developing country, the correct installation was not carried out, resulting in the expansion of earthquake damage. Secondary disasters also cause tremendous damage to developing countries. Tsunamis, fires, and landslides are likely to spread. Infectious diseases can also be a threat that should not be overlooked, although this is often the case in island countries. There is also the case of the 2010 earthquake in Haiti, where 540,000 people were infected in the affected area by cholera allegedly brought by UN peacekeeping forces.

Is there anything we can do for Haiti, a developing country with these problems?

My proposal is an initiative in the form of building support from Japan to developing countries. We would build a certain number of houses in accordance with Japanese standards for earthquake resistance and disaster countermeasures, and conduct a study of the effects of the local weather and environment as a test, after which we would move into full-scale assistance. As for the key building materials, we are considering wooden construction in terms of preserving and utilizing traditional Japanese building techniques and expanding the number of construction companies. The detailed materials of the timber are still under consideration, and we are planning to test the project while searching for better timber, taking into account the local climate and other factors.

II Discussion and implications

The current climate in Haiti is generally similar to that of countries located near the equator, being generally humid and warm, with hurricanes, which are equivalent to typhoons in Japan, occurring annually. This climate is similar to Japan's summer temperatures and humidity, and we thought that Japanese wooden architecture might be feasible in this climate. As for countermeasures against infectious diseases.

Regarding countermeasures against secondary disasters, we are planning to ensure safety by constructing wooden structures in locations at a higher elevation and by increasing the distance between houses. There are many issues regarding infectious diseases. Infectious diseases that do not originally exist in the affected countries, such as cholera, may be brought in from aid units, so it is necessary to take all possible precautions in this regard.

III Conclusion

The conclusion, as mentioned above, is to build a Japanese wooden structure in Haiti, have the refugees live in it in the form of a pilot operation, and improve the building to make it more in line with the Haitian culture and climate. Taking into account the lack of security, we are considering deploying security guards and other personnel as needed. The only concern is the need to send Japanese engineers overseas in this process, and we are looking to improve this aspect of the project in the future.

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Sawada Yasuyuki

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Marine Pollution Surveys and Countermeasures

~Let's protect the ocean's abundance from microplastics~

15th grade, 5th year, 4th class, No.12, Karen Saito

Abstract

One of the major problems that befall us today is environmental pollution. Among them, I conducted research on marine pollution caused by microplastics. Microplastics floating in the ocean are so small that they are difficult to collect. We should think about what we can do to prevent further increase of microplastics. The source of the plastic, 280 million tons of plastic, is currently produced annually worldwide, 40% of which is single-use plastic. Microplastics absorb harmful substances in the ocean, and their effects are not limited to marine life but also affect us humans. How to devise alternatives made of calcium carbonate, which has no effect on the human body, and how to collect the money to recycle plastics without identification marks are the challenges for mankind in the future.

1 Introduction

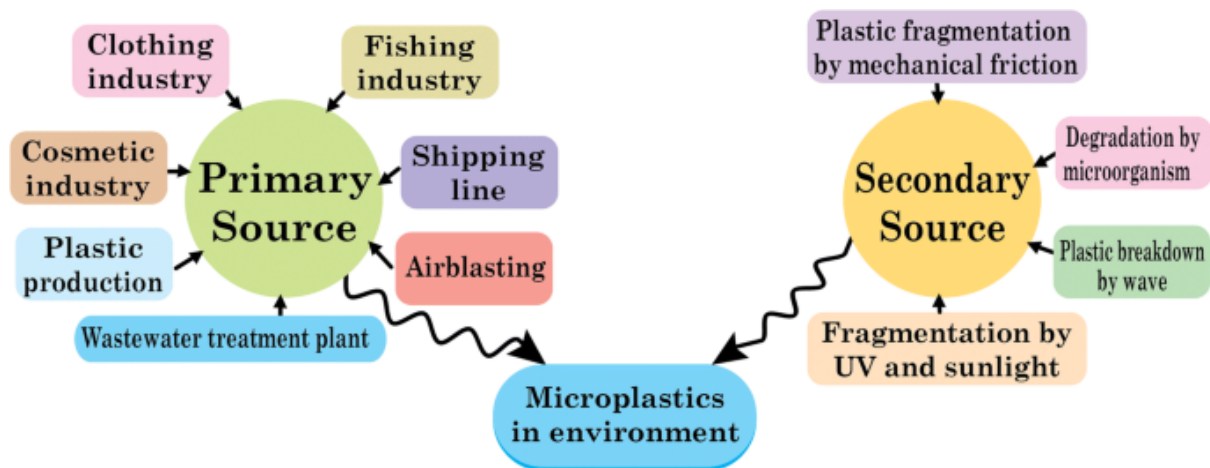
Sea creatures have lost their lives because they ate plastic; they were unable to move because the plastic was wrapped around their bodies. We often see news stories like this. Marine pollution is becoming a global problem, and its effects are not limited to marine life but extend to humans as well. As anyone who separates plastic trash from burnable trash will understand, the majority of the trash in our homes is plastic. Plastic that is not sorted and recycled emits large amounts of greenhouse gasses when incinerated, and some of it drifts into the ocean untreated. The goal of this study is to communicate the negative impacts of marine plastics and other debris. The ultimate goal is to change people's awareness by making them aware of the negative effects, and to reduce plastic emissions and increase recycling rates. The study will examine not only the negative effects of marine pollution on ecosystems in the ocean, but also the possible effects on humans.

Research and understand the current state of marine pollution from past research papers and other sources. In addition to marine pollution, investigate the causes of microplastics, which are one of the main causes of marine pollution, and research and consider whether there are ways to reduce the generation of microplastics and what to do about them when they do

occur. Also, since information on the Internet alone is limited, we will talk to local waste disposal facilities to find out how they are currently processing plastic. Since some microplastics are created by the breakdown of plastic product waste, we will also investigate how to reduce the amount of plastic waste, which is the root cause of microplastics, and how to reduce plastic production itself.

2 Discussion and implications

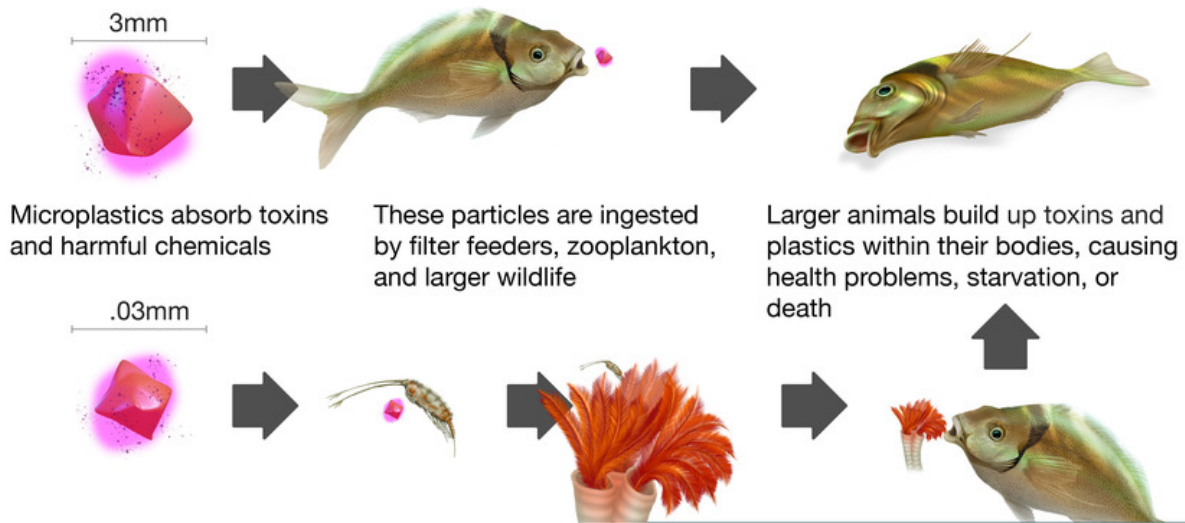
First, we examined microplastics, one of the major causes of marine pollution. Microplastics are generated when plastics that have been discharged into the ocean are degraded and fragmented by "photolysis" or "thermal oxidative degradation".



The definition of microplastics is a piece of plastic smaller than 5 mm. If it is only large plastic debris floating in the ocean, it is not impossible to collect it, but if it is degraded to the size called microplastics, it will be impossible to collect it. Therefore, rather than doing something about the microplastics currently drifting in the ocean, the top priority is to prevent further plastic from being introduced into the ocean. Currently, 280 million tons of plastic are produced annually worldwide, 40% of which is single-use plastic. About 70% of marine debris is plastic. The effects of ingesting plastic are physical ingestion disorders and toxicity caused by the transfer of plastic-derived chemicals into the body. Microplastics floating in the ocean are eaten by small fish, etc., and remain in their bodies. As a result, we humans who eat fish may also be affected by these effects. When we eat fish contaminated with chemicals, we are indirectly introducing these chemicals into our bodies. Microplastics can absorb harmful substances in the ocean, and the toxic substances detected in microplastics are diverse.

Microplastics move up the food web

Microplastics are plastic pieces less than 5 mm in size.



As many as 70 types of environmental hormones have been detected in microplastics. Polychlorinated biphenyls, which are also on the list, were the subject of the Kanemi Oil Syndrome Incident. In 1968, dioxins such as polychlorinated biphenyls (PCBs) were contaminated in the manufacturing process of cooking oil produced by Kanemi Warehouse, and people who consumed the cooking oil (called "Kanemi rice oil") and their unborn children suffered from food poisoning in western Japan. The case was a case of food poisoning in western Japan. In one case, a fetus born to a pregnant woman who had consumed the rice oil was black in color due to pigmentation. This should give you an idea of how dangerous the chemicals found in microplastics are, and what the risks are of ingesting microplastics.

Plastic and paper alternatives, such as LIMEX and Stone-sheet, were also investigated. These materials use calcium carbonate as a raw material; Stone-sheet is composed of more than 50% calcium carbonate. These materials have been shown to produce pellets, food trays, hangers, and other products that are comparable to currently available plastics. Calcium carbonate is also used in foods and has no adverse effects when taken into the body. It needs to be investigated if it is possible to create a plastic substitute with a higher percentage of calcium carbonate.

We also looked at how plastic products are processed. Cutlery items such as plastic spoons and forks, toys made of plastic... plastic products that do not have an "identification mark"

(image) are The recycling cost burden for businesses is not stipulated by law, and under the current situation, plastic products are disposed of as garbage instead of being recycled. In my opinion, there are more plastic products in the world that do not have an identification mark. There are many plastics with identification marks, such as containers for prepared foods and plastic bottles, but there are probably even more plastics that are "commodities," such as toys for young children. The reason they are not recycled is where the money for recycling is collected from.



3 Conclusion

My research question was "What are the negative effects of microplastics, a major cause of marine pollution that is a global problem, on marine life and humans? The conclusion was that "the effects of ingesting plastics are physical ingestion disorders and toxicity caused by the transfer of plastic-derived chemicals into the body. Microplastics floating in the ocean are eaten by small fish, etc., and remain in their bodies. As a result, we humans who eat fish may also be affected by these effects. The "microplastics" are a toxic waste that is carried in the oceans. In addition, since the goal is to increase the recycling rate, my conclusion is that "if businesses are not required to pay for recycling, then let's raise money for recycling through fundraising.

Now that we have reached a conclusion about what kind of impact it will have, our goal for the future is to focus on how to disseminate it and change people's awareness of it.

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spreading and advance of shogi
- how to make traditional culture nearby-
5413 Sakai Hinata

Abstract

It is hard for a contemporary globalizing situation to preserve traditional culture which is only done by one country. I think that to preserve them it is important to add more worth to them. In this study I chose shogi as an example of traditional culture. I am going to get information about the difficulties and the practice which is being done. Then I will suggest new ideas and reform ideas.

In conclusion, I found that shogi has an educative effect, for example improving concentration, manners, accepting one's defeat and thinking calmly so I want shogi to be used as an educational tool.

My research question is What is necessary for shogi to be spread all over the world and used for education.

People hesitate to play shogi because it seems to take much time and it looks difficult. I think that this is because there are a lot of pieces called Koma. I think that reducing the number of Koma is a way to make shogi easy for beginners to play.

I want to make guidelines and pieces on which a guide is written to show where it moves.

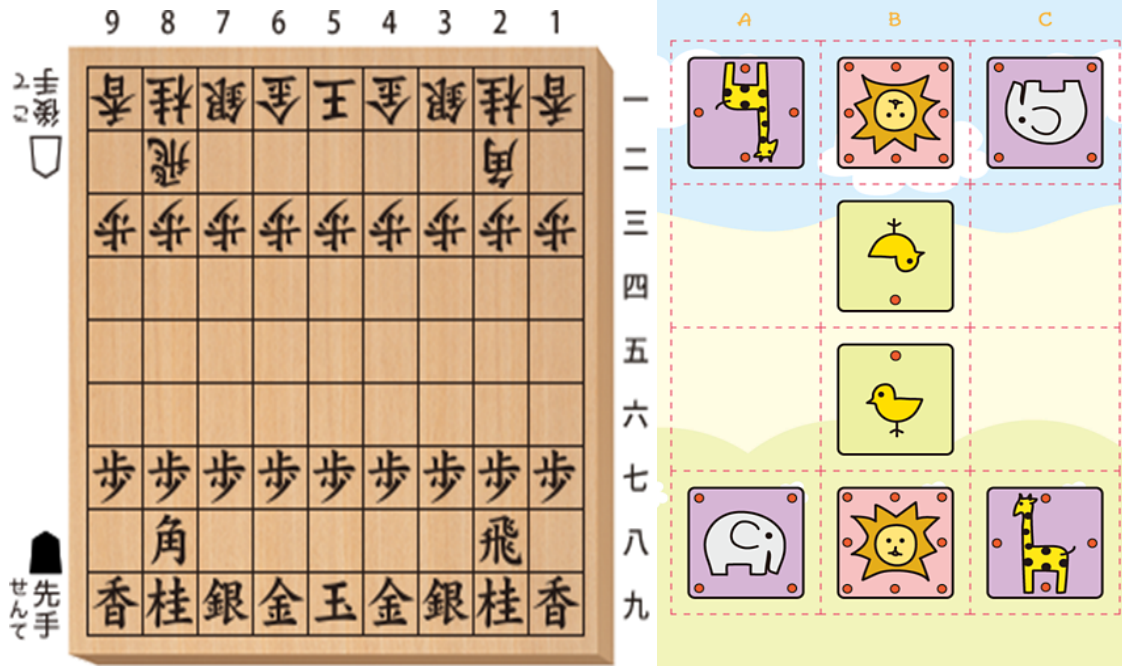
Introduction

These days because of globalization we can know foreign famous culture but we do not know minor cultures even if it is their own culture. I am sure that to know other cultures means to know others. Therefore I study shogi culture as one example of minority culture. Furthermore I want to search for the effect of playing shogi to add more meaning to shogi, using my experience.

Discussion and Implication

The educational effect of shogi is that improving concentration, to be polite, there is no judge so when one loses he has to accept his defeat, thinking deeply, being calm, and so on. Shogi has unique culture. On finishing the game the two players talk about what is the best move at that time. In that people will learn to get the ability of discussion, cooperation and solving problems. What is more, told one move which you cannot find out, you can accept new way of thinking and get wide field of knowledge. Not only children but also adults owe this effect to shogi. I comprehended that shogi is a tool for lifelong education.

One reason why this interesting game doesn't spread to the world is that it seems to take much time and is difficult. This is the same reason why shogi doesn't spread in Japan. It was overcome in Japan thanks to big star players and games. Games are useful to fascinate people. We can use app games and the 3x4 shogi using pieces with characters and arrows to show where to go written on. It is easy to play. However it is hard to change over this 3x4 shogi to the 9x9 shogi, so I will make the transition process.



Conclusion

When it comes to spreading something difficult, it is good to make it easy to understand. Gradually accustomed, they will do the real one. For example in shogi I suggest making 5x7 shogi. The good point is depending on the achievement of each player we can change Koma. It is large enough to enjoy the essence of shogi. Changing the Koma is one way. For example, pieces on which a guide is written to show where it moves or some cultural things are written.

In spreading abroad I am sure it is good making an app game. It is good that there is no element of competing because now because of counting wins many people are playing with bad manners. I would like beginners to enjoy the introduction easily and remembering the rules. Therefore in the existing app I want to supplement new function.

In an analog aspect, the Japan shogi association should make more effort to make shogi prevail in foreign countries.

銀	金	王	金	銀
	飛		桂	
歩	歩	歩	歩	歩
歩	歩	歩	歩	歩
	桂		飛	
銀	金	王	金	銀

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古作 登 小田切 秀 人 川崎一克 寺谷 睦

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How to Reduce Sleep Disturbances as Much as Possible

Sleep Disorders and Daytime Performance

5414 shimizu miyuki

1. Introduction

The theme of this research was chosen to reduce sleep disorders as much as possible. The reason I chose this research theme is because I like to sleep. I sometimes feel sleepy during the day even after sleeping at night, so I wanted to know the cause. I also wondered if this cause might be related to ways to reduce sleep disorders. My goal in this research is to find ways to help myself cope with sleep disorders.

2, the main argument

There are some things we found out in this research. First, the types of sleep disorders by a group of researchers from the University of Tokyo and the Institute of Physical and Chemical Research, who converted acceleration data from the UK into sleep data, has been revealed.

16 newly classified types of sleep patterns

1 With mid-onset awakenings, which may be associated with insomnia. Total sleep duration is high.

2a Irregular sleep schedule.

2b Has repetitive fragmented sleep and total sleep time is low.

3a Has mid-onset awakenings, which may be related to insomnia. Total sleep duration is general.

3b Has mid-onset awakenings, which may be related to insomnia. Total sleep duration is low.

3b-1

Total sleep duration is low, with long mid-wake, possibly related to insomnia.

3b-2

Total sleep duration is low, with both long and short awakenings, considered associated with insomnia.

4a Daily rhythm (sleep-wake rhythm) is estimated to be longer than 24 hours.

4b Average sleep, with the highest total number of data.

4b-1

Long sleepers.

4b-2

Morning type.

4b-3

Daily rhythm (sleep-wake rhythm) is shorter than 24 hours.

4b-4

Total sleep duration is short, with short awakenings, possibly related to insomnia.

4b-5

Total sleep duration is generalized, with a small number of long awakenings, possibly related to insomnia.

4b-6

Nocturnal.

5 No daytime sleep.

We have learned that there are many types of sleep disorders today, and they are divided into many subcategories. It is thought that I am a low sleeper and a night person applies to me.

Secondly, there are many people in today's society who suffer from sleep disorders, and the problem is that they are unable to get enough sleep at night, which affects their performance during the day. The problem of sleep disorders is now becoming a major social issue as well as a medical one. In recent years, Japan has been considered to be one of the most sleep-deprived countries in the world. According to the Ministry of Health, Labor and Welfare's e-Health Net, one in five people has a sleep disorder. Insomnia increases with age, with approximately one in three people over the age of 60 reported to have insomnia. I have therefore researched what kind of environment has a negative influence on sleep. One example is electricity. Some people turn on a miniature light bulb when they go to bed. However, the light from the lightbulb may enter their eyes, making it difficult for them to fall asleep. In recent years, with the development of electronic devices, the number of people who look at them all the time, even before going to bed, has been increasing rapidly. This is a negative cycle of spending time on electronic devices because they are unable to sleep, which makes it even more difficult to fall asleep.

These factors have made it clear that it is important not to touch electronic devices until just before going to bed, and not to sleep with the light on when going to bed. It is also said that sleep disorders are not good for the body and may cause complications with other diseases. We looked into how sleep disorders can have a negative impact on health. I found out that this is the kind of research that has been conducted.

The findings of this study indicate that sleep disturbances and chronic disease are significantly related. Although the symptoms of chronic diseases caused by sleep disorders are few, a large percentage of people with chronic diseases have sleep-related problems.

In this study, we have been thinking about what we ourselves can do to alleviate sleep disorders, but upon investigation, we found that it is difficult to cure sleep disorders completely and that the environment around us has a lot to do with it. We also found that sleep disorders are sometimes complicated with other diseases and lead to lifestyle-related diseases. Through this research, I would like to investigate this in the future because sleep disorders are related to chronic diseases.

3, Conclusion

The conclusion of the study is that it is important not to touch electronic devices too much before going to bed and to turn off the lights as much as possible or make it as dark as possible when going to bed. As for future research, we have found that sleep disorders are very much related to chronic diseases, and we would like to investigate this matter in the future.

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Health Promotion

~Spreading Healthy Life and Preventive Medicine~

5415 Shuto Ayana

Abstract

I proposed two things. First one is to spread healthy dishes. I researched Mediterranean dishes and it is good for our health. Second one is to spread preventive medicine. It is important for everyone, and it has a lot of merits. I thought many people become healthy, so they can extend healthy life expectancy.

1. Introduction

I'm researching healthy living. I had also researched medical bills and COVID-19 until last year. However, it was difficult to consider COVID-19 because I couldn't forecast the future, and it was unprecedented at the time. I decided to research only healthy life and preventive medicine. I pointed to lifestyle-related disease, and to solve the problem, I proposed a Mediterranean diet. This year I tried how I spread this dish and to research other healthy dishes. Last year, I thought preventive medicine was late, so I considered it deeply.

My research question is what should be done to prevent many people from contracting lifestyle-related diseases. My hypothesis is as the number of people suffering from lifestyle-related diseases increases with age. I think we need to distribute notices of regular medical examinations and self-check forms for lifestyle-related diseases to workplaces and other workplaces, so that they first become aware that they may be facing a crisis. To the younger generation, I think using SNS and spreading information is effective. Younger generations have an image that they don't care about their health yet, and neglect their own health.

2. Discussion and Implication

The World Health Organization (WHO) announced "the ten most causes of death" from 2000 to 2019. According to WHO, lifestyle-related disease is the most common cause of death. So many people are curing lifestyle-related diseases now. Then I decided to reduce the number of patients and to prevent diseases.

First, I would like to explain diet. Many Japanese people often eat Japanese food, and it has a lot of nourishing ingredients. In addition it has a lot of varieties. However, the disadvantage is that it has too much salt. For example, if we eat miso-soup in the morning and in the evening, we take half the amount of salt which we can take in a day. Therefore to cover this disadvantage, I suggest a Mediterranean dish. Mediterranean dishes have a lot of vegetables, and we can continue to prevent obesity. It uses olive oil, so it continues to prevent arteriosclerosis and aging. In addition it's high in protein, and a little fat then we can get muscle, and reduce fat. On the other hand, the staple diet is bread and pasta, so we can take in a lot of dietary fiber. After all, we can reduce taking too much salt,

because Mediterranean dishes use herbs instead of salt. According to the questionnaire, more people like Western dishes than Japanese food among people aged between ten and forty nine.

Next I would like to explain about preventive medicine. Preventive medicine is divided into primary prevention, secondary prevention, and tertiary prevention. Primary prevention is to improve health and to prevent disease in the early term. To adopt moderate exercise, and to prevent metabolic syndrome are effective ways. Secondary prevention is the early detection and appropriate treatment of a disease to prevent it from becoming serious. If this progresses, it will not only reduce the burden on patients, but also reduce medical and personnel costs. Tertiary prevention is rehabilitation. This refers to preventing the recurrence of diseases that have already developed, and specifically includes health guidance and rehabilitation. To give an example of cervical cancer among the issues related to vaccines, which are part of preventive medicine, the cervical cancer vaccination rate in Japan is extremely low compared to the rest of the world. The mortality rate is actually high, and despite the fact that the cost of getting the vaccine is less than 20,000 yen, the cost of getting the vaccine will be as high as 600,000 yen. If the cost is 30 times higher, even if it is not possible, you should get a vaccine so that you don't put a burden on your body, considering the risk if you do get it. In particular, groundless rumors about the cervical cancer vaccine spread, creating a trend that people should not be vaccinated, so I think it was difficult to change that trend. However, now it has become possible to get vaccines at public expense, and due to the effects of the steadily spreading coronavirus, the number of people refraining from medical examinations has increased, and the discovery of illness is delayed due to the lack of regular medical examinations and checkups. The health checkup rate will not reach 70% for any age group. In addition, the number of people visiting the clinic has decreased in all age groups compared to the previous year. I mentioned earlier that it was the impact of the coronavirus, but in fact, about 30% of people answered that they would like to refrain from undergoing cancer screening in 2021, and even those who have undergone cancer screening in the past three years. It turns out that one person wants to refrain from undergoing cancer screening in 2021. In addition to the risk of contracting the coronavirus, some answered that they did not feel the need to undergo health check ups because they were not worried about their health.

3. Conclusion

I think it is difficult to eat Japanese food every day. However, eating fast food instead of Japanese food has the opposite effect. Therefore I suggest eating Japanese food plus Meditalian dishes. Also, I promote the adoption of these healthy foods at the office and cafeteria where relatively young people use them. If these prices are expensive, people go to other restaurants or fast food restaurants. For that reason I want to try this for 500 yen. Ingredients are important in healthy food, so it needs 500 yen at least. I think its cost is lower than other restaurants. People seek low cost and delicious food. If they can eat delicious, healthy and cheap dishes at the office or cafeteria, they feel very nice.

Second, I want to spread information about preventive medicine. Around us, a lot of information is everywhere. However not all information is actually. Therefore I want to spread true information according to experts. I think people often see medical information at hospitals. Doctors spreading true information to patients is more efficient. Maybe patients believe the doctor's information. For example, if young girls who are targets of cervical cancer come to the hospital, doctors give leaflets about the cancer. In fact, some hospitals carry them out. For these reasons I suggest spreading information at hospitals, and I consider spreading it by SNS. Many young people use SNS, so it is efficient to spread information easily. I want to be careful to provide credible information, and I need to tell the risk of disease. I think our healthy body is our fortune.

From these things, I suggest preventive medicine, and eating healthy food which prevent lifestyle-related disease.

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Overview of This Search

There are many countries in the world where euthanasia systems have been introduced. (Currently, some states in the U.S., some states in Australia, Switzerland, the Netherlands, Luxembourg, Belgium, and New Zealand have introduced euthanasia. The main reasons for this are the value that Japanese people should not kill people, and the question of who will take responsibility when there is a chance that the person will survive after euthanasia is carried out. Therefore, we thought that if we could create a system that no one could criticize, the path to its introduction would be opened at once.

The way of this search

- 1 Research on the Internet to find out why the euthanasia system is not progressing in Japan
- 2 Research countries in the world that have advanced euthanasia systems.
- 3 Find commonalities among the countries you researched in 2.
- 4 Compare the problems in Japan with those in 3.
- 5 Summarize what is needed to introduce euthanasia in Japan based on the process so far.

The outcome of this research

First, let us define the euthanasia system. Euthanasia is the process of putting an ill person who is not expected to survive, to death in a less painful way according to the person's wishes. The important point here is that the person must be ill. Most of the countries that currently have euthanasia systems in place give the right to die by euthanasia only to those who are suffering from an illness that is not expected to be cured. (Only the Netherlands grants the right to dementia patients.)

(Only in the Netherlands does the right to euthanasia exist for patients with dementia. (Currently, some states in the U.S., some states in Australia, Switzerland, the Netherlands, Luxembourg, Belgium, and New Zealand have introduced euthanasia. In such a situation, little progress has been made in Japan. The main reasons for this are the values of Japanese people that it is wrong for a person to kill another person, and the question of who will take responsibility for the possibility of the person's survival after euthanasia is performed. Therefore, we thought that if we could create a system that no one could criticize, it would pave the way for its introduction at once.

Moreover, as Figure 1 shows, more than half of Japanese are in favor of the euthanasia system. Therefore, if we could create something that would silence the critics, the introduction of the system in Japan would go a long way and would spread throughout the world.

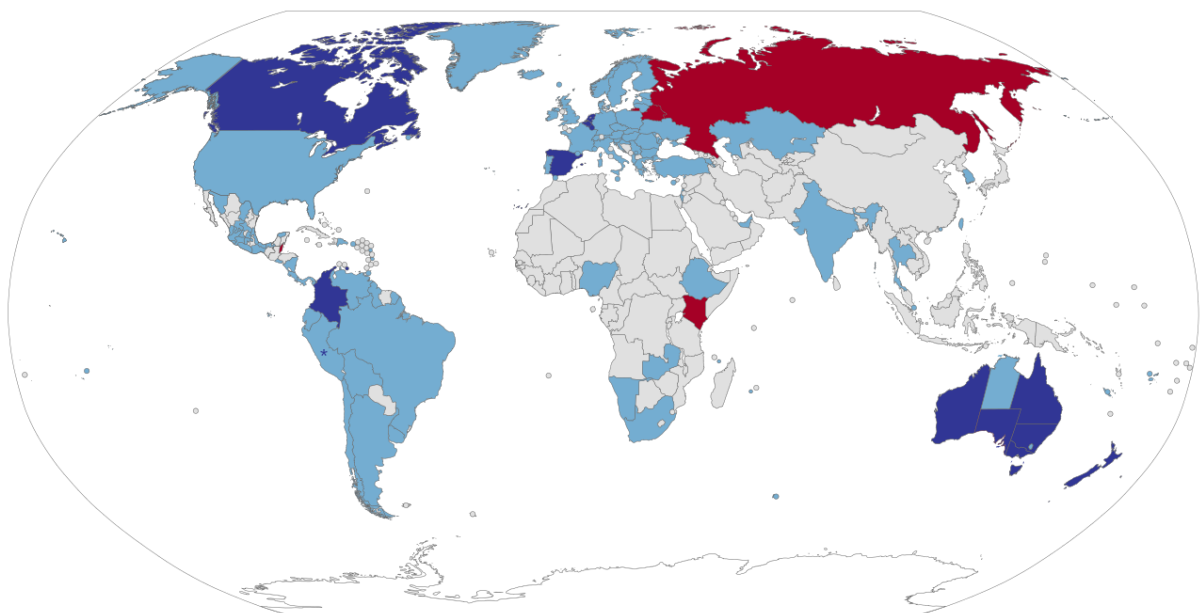
In creating a system, the Netherlands is a good place to start. In the Netherlands, it is legal for dementia patients to die by euthanasia.

First of all, one of the reasons why euthanasia is criticized is that there is no one to carry it out. No human being would want to kill another human being. To solve this problem, I took a cue from Switzerland. Switzerland has legalized the practice of euthanasia not only for its own citizens but also for people from other countries. However, when the procedure is carried out, the doctor gives the patient a drug, and the patient uses the drug to assist in the suicide. Therefore, in order to protect the mental health of the doctor, assisted suicide is used in Japan. If the patient is unable to use the medication on his/her own, this form of assisted suicide is used. This solves the problem of the physician's mental health.

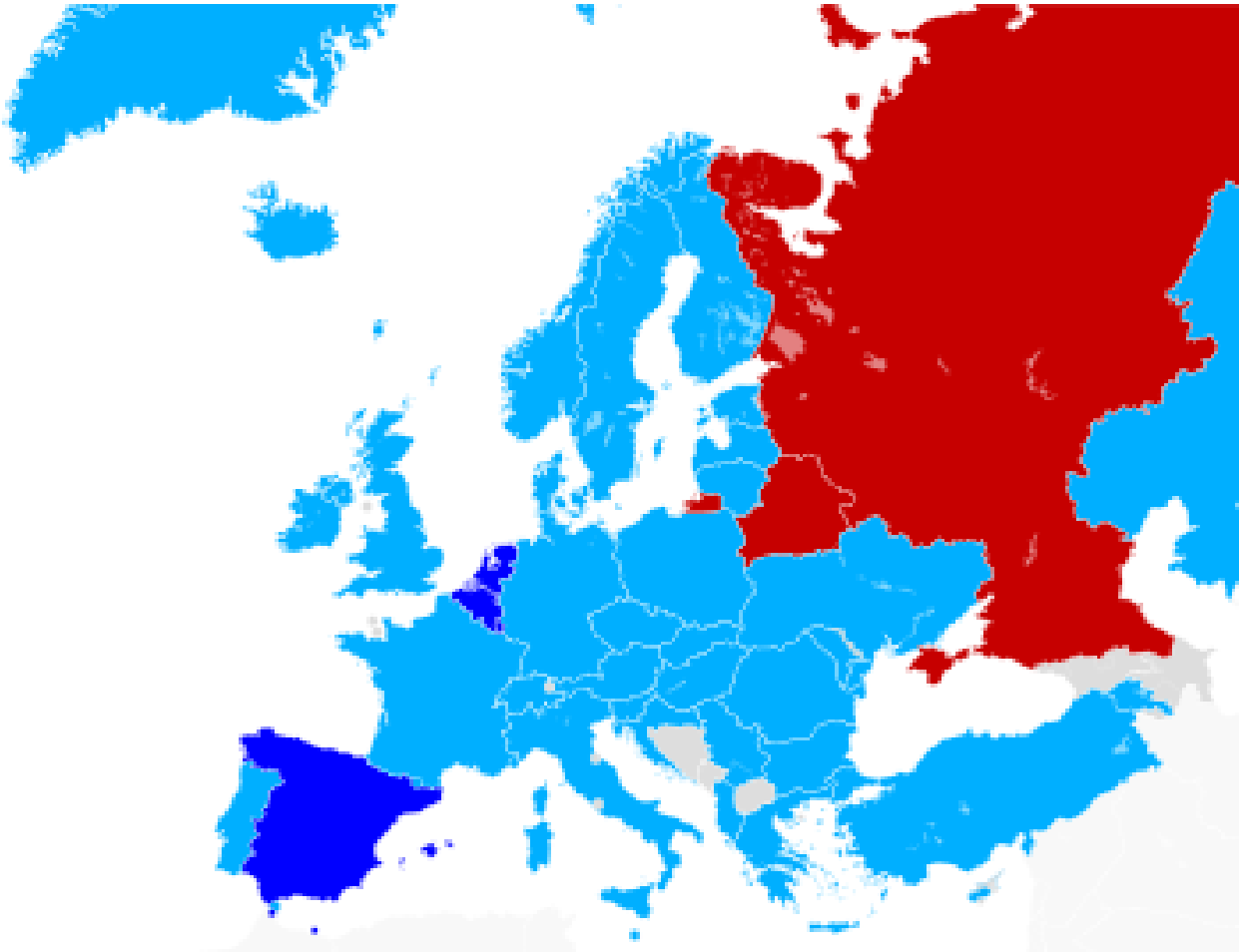
Next, let us consider the major reason for the lack of progress in introducing the euthanasia system: permission for euthanasia. Generally, the doctor in charge of the patient decides whether or not euthanasia can be performed. And that decision is very important. The decision is also very important, because it would be irreversible if there is still a chance of survival after euthanasia is performed. To solve this problem, euthanasia can be authorized only if all three doctors other than the doctor in charge agree with the decision. This would greatly reduce the burden on the doctors in charge and reduce the possibility that it would later be discovered that the patient had a chance of survival.

Secondly, the psychological aspect of the bereaved family must also be taken into consideration. Therefore, not only a clear statement of the patient's intention, but also the consent of the family is essential to euthanasia.

The document of this search



Current status of euthanasia around the world: ■ Active voluntary euthanasia legal (Belgium, Canada, Colombia, Luxembourg, the Netherlands, New Zealand, Spain, and the Australian states of New South Wales, Queensland, South Australia, Tasmania, Victoria and Western Australia) ■ Passive euthanasia legal (refusal of treatment / withdrawal of life support) ■ Active euthanasia illegal, passive euthanasia not legislated or regulated ■ All forms of euthanasia illegal



Current status of euthanasia in Europe: ■ Active voluntary euthanasia legal ■ Passive euthanasia legal ■ Active euthanasia illegal, passive euthanasia not legislated or regulated ■ All forms of euthanasia illegal

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安楽死について

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安楽死が導入されている国ってどこ？

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安楽死が認められている国の共通点 ニューージーランドではなぜ合法化が進んだのか

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諸外国の安楽死に関する法制度

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Protect Reasonable

~Aim the world everyone can express yourself freely~

ID:5417 Name:Hiroki Taguchi

Abstract

This study is what is to reduce discrimination for LGBT in the world.

Now the number of people who work in society as society leaders is increasing. In addition, there are a lot of people who are active over their gender. However, there are a lot of people who is feeling terror to become active or can't make true the activity which they really want to do. Most of the reason is "society" or "surroundings". Part of that sometimes rejects them, and makes the world which isn't free for all.

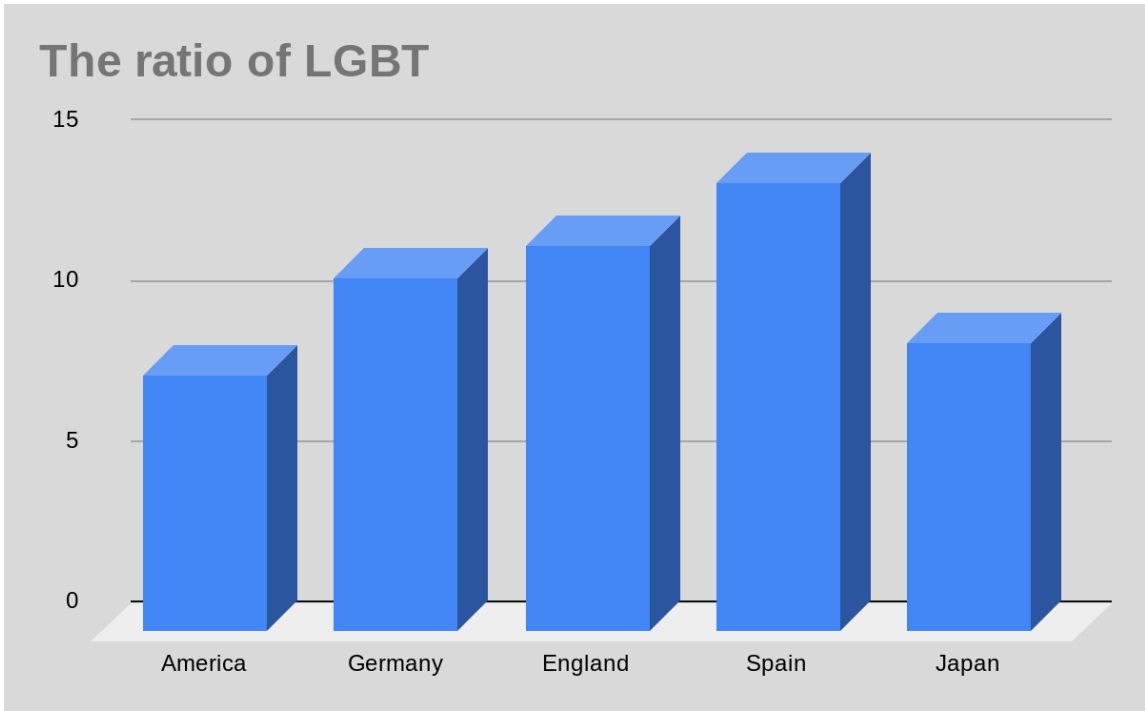
In this study, I want to promote the study with taking research to people who is suffering by today's discrimination. Because by doing that, I will be able to hear their true voices. I think that it is the most important to hear the true voices which by people who relate to this problem.

1 Introduction

Before study, I think about the meaning of this study. Then I came to mind the word "Equality". I think we need equality between people to people. Social hierarchical relationships should be born with protect equality as the same race. However, there are existing states that social hierarchical relationships are in inequality now. For these occasions, I felt that it influences people's gender in today's world society. I have heard about it through social media, and seen the scene in my eyes. As a member of people, this situation makes me so sad because equality is broken by people even though it is necessary and should be protected for people. I wanted to resist this, and decided to research this. It is the reason why I study about that. It is also the significance to research this, I think.

2 Discussion and Implications

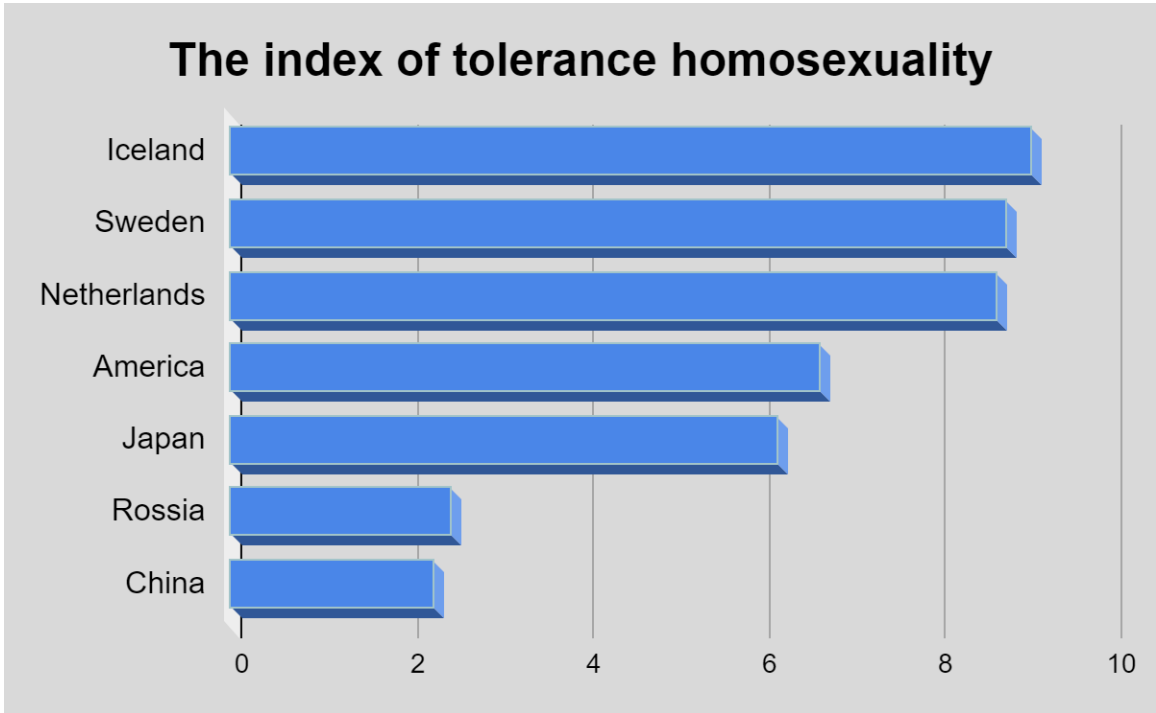
According to a company's survey, the ratio of people who is included "LGBT" is different between companies.



(graph① The ratio of LGBT)

In this data(graph①), there are about 10% of LGBT in the world. But actually more people are LGBT, I think. I think so because today, there are a lot of people who feel terror to confide truth. Even if they are protected as anonymous surveys, it can't solve their worries. For this reason, Japanese countries' findings have different results.

In addition to this study, I examined the countries which accept LGBT and gender's equality.



(graph② The index of homosexuality tolerance, made by「世界価値観調査」)

According to this data, Iceland, Sweden, and the Netherlands are the countries that have a high-ratio of acceptance. So I researched Iceland's condition.

In Iceland, there were some lectures and talks to criticize gender-discrimination (In 1990s). By these lectures, government enforce some laws to get rid of discrimination. Now, these efforts influence the country greatly. To change the laws is one of the best way to reduce discrimination. To encourage such change, people who understand them must know them more and make the world that they can be protected their reasonable.

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Family acceptance in adolescence and the health of LGBT young adults

Widespread use of online tourism

~continued popularity~

— continuation originality anywhere,anytime —

ID 5418 Name Hoshizora Takei

○Abstract

research question:What can be done to ensure the continued popularity of online tourism while leveraging the advantages of online tourism alone?

I started this research to continue the population and make a fixed demand for online tourism.

Originality is important to satisfy the demand for online tourism,so I suggest two ideas.First,do a tour that tourists can travel with famous people.Second,approach to hospitals or nursing homes to do online tour there.As for the first one,it is to make the most of online tourism's originality that can travel with people in far.As for the second one,it has demands for people who stay in hospital but want to go sightseeing.Also,doing online tourism in nursing homes has big demand for elderly people because it is hard for elderly people to do online tourism alone.

1 introduction

Since COVID-19 started to spread,people all over the world could not go travel for sightseeing spot,so online tourism came into fashion.However, now,the vaccination rate is in very high level in the world and the number of infected people calm down.In this situation,the future of online tourism is concerned.Online tourism are introduced as a substitute cases or compromise cases by both of tourists and operators,and this situation causes the misgiving;the concern of decline of online tourism after our lives back to normal.Then,I do not want to depopulate the online tourism which developed as a new industry,and I set this theme and started my research. In my opinion, in order to keep online tourism from going out of business and to further develop it, it is necessary to implement unique initiatives for online tourism. The purpose of this research is to implement unique initiatives to prevent online tourism from going out of business and to enable its further development.

As there are few books on online tourism, I will gather information mainly through the Internet. Sources include the websites of travel agencies offering online tourism, articles on online tourism, and the Japan Tourism Agency's Tourism and Travel Consumption Trends Survey. In addition, as a research method, I will conduct our own online tourism and come up with proposals based on the advantages and disadvantages I have actually experienced.

2 Discussion and implications

First, I captured the characteristics of online tourism. The biggest feature on the tourist side is the ease of travel. Some expensive courses require the use of VR goggles, but basically you can participate from anywhere with a single computer. It is also possible to travel with friends and relatives who live far away from you. Most tours last only a few hours, so there is no need to take consecutive days off, and you can join at any time when you are free. Also, while local travelers need to make arrangements for flights and accommodations, online sightseeing tours are easy for anyone to apply for because all they have to do is choose a tour and apply. Another advantage is that the cost is considerably lower than that of a local trip.

But of course there are drawbacks. Online sightseeing offers less freedom than going to the destination in real. Most tours are conducted by a tour guide while watching a video prepared by the travel agency. In addition to the fact that you are often touring with other tourists, you will not be able to fully enjoy all of the sights and attractions. In addition, you will not be able to feel the local atmosphere, eat local cuisine, or browse souvenir stores. This is a significant drawback, especially since food and souvenirs are considered by many people to be the best part of their trip.

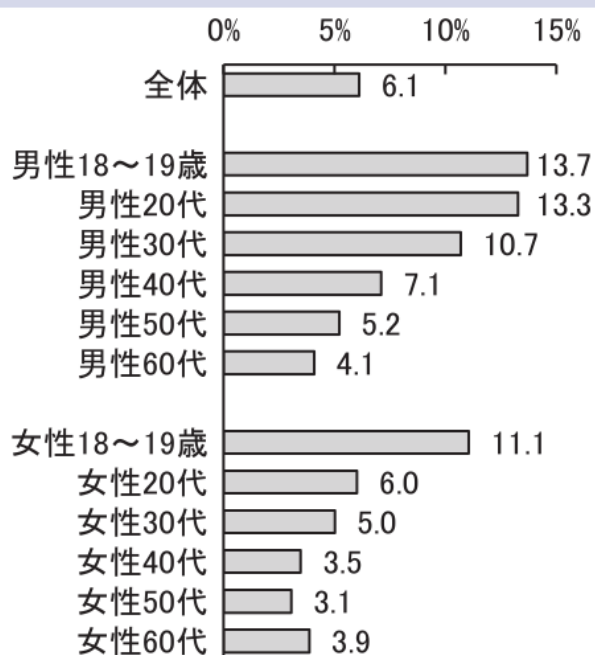
Here I considered the future of online tourism. Online tourism is an industry that has

developed as a result of the outbreak of the new coronavirus. When the outbreak of the new coronavirus is over and people are able to visit tourist destinations, the number of online tourism activities will probably decrease, at least compared to today. What will be important, then, is to continue to attract tourists with "online tourism-only" activities.

Based on the above points, we would like to propose the first thought, "conduct sightseeing tours with celebrities," taking advantage of the characteristics of online tourism, which allows participation at any time and from any place.

Online tourism also has other drawbacks. That is, since online tourism is conducted using computers, there are few elderly travelers who do have access to computers. The following two graphs show the results of a survey conducted by the Dai-ichi Life Economic Research Institute on the percentage of respondents who have experienced online tourism and the percentage of those who are interested in online tourism by age group.

資料1 「オンライン観光」の経験率

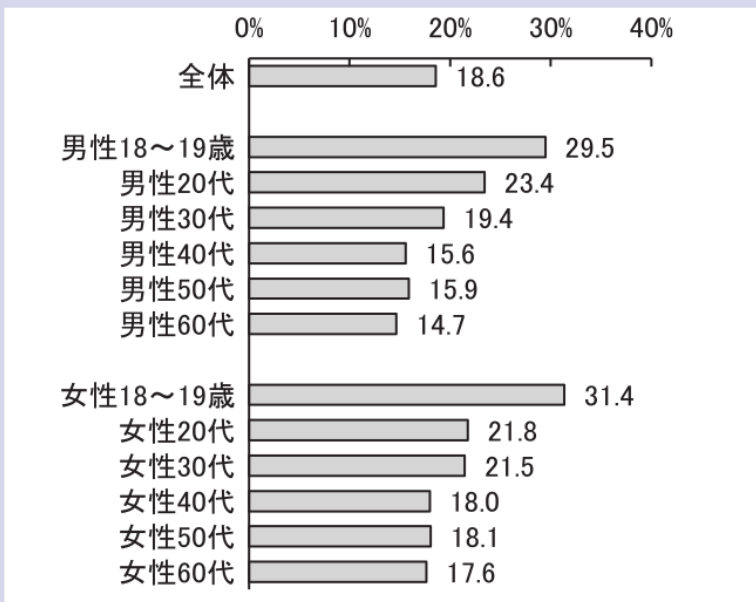


(注)この調査では、全国の18～79歳を対象としたが、本稿ではそのうち18～69歳(17,599名)の回答を分析

(出所)第一生命経済研究所「第11回 ライフデザインに関する調査」(2021年1月29日～2月3日実施)より作成。

調査の詳細は、2021年4月発行「コロナ禍の中での外出・旅行意識」(<https://www.dlri.co.jp/report/ld/153914.html>)に記載。

資料2 「オンライン観光」に関心がある人の割合



(注)オンライン観光に参加したことがない人の回答。「『オンライン観光』に関心がある」という項目に、「あてはまる」または「どちらかといえばあてはまる」と答えた人の合計割合を表示。

(出所)資料1と同じ

From these graphs, it can be seen that the older age groups (here defined as those in their 40s to 60s) have less experience and interest in online tourism than the younger age groups (here defined as those in their 18s to 30s). Based on the expectation that "many older people must enjoy or want to travel because they have more money to spare" and "older people, especially the elderly, may have difficulty in traveling to distant places due to the burden on their bodies," I propose the second thought, "I propose to approach hospitals and nursing homes to proactively incorporate online tourism. The second thought is to approach hospitals and nursing homes to actively incorporate online tourism."

3 Conclusion

conclusion1 Do tours where you can see the sights with celebrities.

conclusion2 Approach hospitals and nursing homes to actively incorporate online tourism.

about conclusion1

As mentioned above, one of the advantages of online tourism is that you can do sightseeing in the same room with people who are far away. As an initiative to take advantage of this, it would be a good idea to offer tours that allow visitors to sightsee with celebrities. By holding these tours several times a year and charging a premium fee, it would be possible to attract a continuous stream of visitors and generate income. I thought it would be possible to attract people of all ages and genders by holding tours with celebrities from as many genres as possible (Johnny's, Enka singers, actors, comedians, etc.).

about conclusion2

As the datum from the Dai-ichi Life Research Institute shows, the number of older adults who have experienced online tourism is low. In addition, it is believed that older people have physical problems that make it difficult for them to travel far from home. Therefore, I thought it would be a good idea to conduct online tourism in hospitals and nursing homes to spread the content of tourism among the elderly and to encourage those who are unable to travel far due to physical problems to do so. I believe that this would generate a certain level of demand, and that it

would be advantageous for bedridden people to be able to enjoy sightseeing.

In the future, I will consider how to request celebrities, nursing homes, and hospitals and to travel agencies, as well as contemplate the source of funds.

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Animal Protection Around the World

-Reducing the Killing of Dogs and Cats-

5419 Miko Nakamura

Abstract

The purpose of my research is to eliminate the killing of animals so that humans and animals can live in a better relationship. After researching the Internet and literature, I found that the problems of animal welfare in the world at present are: malicious mass breeding by breeders for pet stores, lack of interest in animal welfare among people, differences in the severity of animal welfare laws and lax enforcement in different countries, and strengthening of animal shelters. The study revealed that people are not sufficiently interested in animal welfare. In Germany, which is considered an advanced country in animal welfare, there are strong laws and enhanced shelters, and the relationship between humans and animals is stronger. Thus, it is important to make people feel the responsibility of owning animals and to reduce the number of abandoned animals. In addition, in the course of our research, we found that different countries have different ways of thinking about animals. This means that we must maintain diversity among countries and look for better ways for people and animals to live together.

1 Introduction

I have a dog, the first one I bought from a pet store and the second one directly from a breeder. The motivation for my research was to find out if there is any way to save the lives of animals when I learned that dogs. In addition, other animals are killed if they are not bought by humans.

The purpose of this research is to eliminate the killing of animals so that humans and animals can live in a better relationship. Also, to eliminate the number of lives that are killed by culling. The research question is: How can we eliminate the killing of dogs and cats in the world?

The research method will be to use the Internet and literature to research each of the past and current global efforts to reduce animal killing. Each effort will be compared and good points and areas for improvement will be found. In addition, we will go to the places where the country, prefecture, or city is involved in animal welfare efforts, or where the public health center is involved in its own efforts, to see the sites and find the problems and good points.

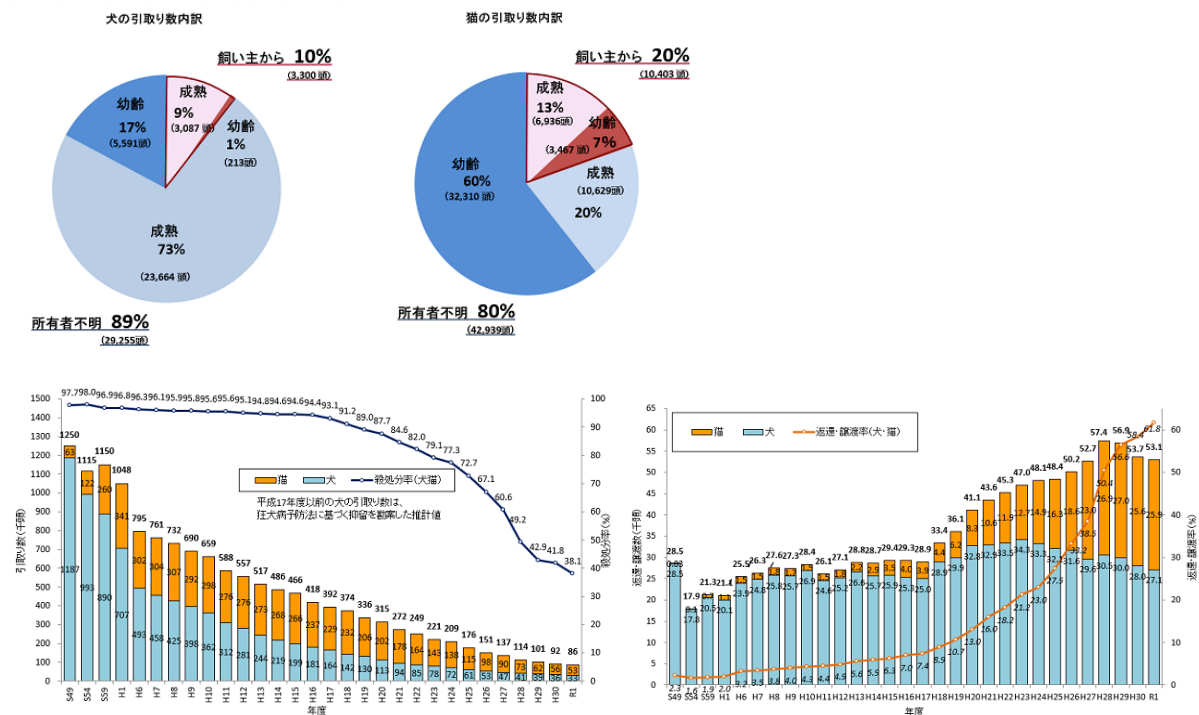
2 Discussion and Implications

First, regarding the current situation in Japan, Japan is said to be a pet-less developed country, and the actual number of dogs and cats killed in FY 2019 was 5635 and 27108, respectively.

■ 犬・猫の引取り及び処分の状況

	引取り数					処分数								
	飼い主から		所有者不明		合計	返還数	返還数のうち 幼齢個体	譲渡数	譲渡数 のうち 幼齢個体	殺処分数 ※				殺処分数 のうち 幼齢個体
	成熟個体	幼齢の個体	成熟個体	幼齢の個体						①	②	③	合計	
犬	3,087	213	23,664	5,591	32,555	10,814	379	16,312	4,177	3,554	1,270	811	5,635	1,051
猫	6,936	3,467	10,629	32,310	53,342	305	65	25,636	16,436	10,478	10,741	5,889	27,108	18,176
合計	10,023	3,680	34,293	37,901	85,897	11,119	444	41,948	20,613	14,032	12,011	6,700	32,743	19,227

A breakdown of the number of animals taken in shows that most dogs are mature animals, while most cats are juveniles. In addition, more cats and dogs were taken in by unknown owners than by their owners. This is most likely due to illegal dumping by the owner, and such people need to be cracked down on in order to reduce the number of take-backs.



The left chart shows the number of dogs and cats taken in nationwide, and the right chart shows the number of dogs and cats returned or given away nationwide. Both the number of dogs and cats taken in and the rate of cats killed have been decreasing year by year. In addition, the number of returned/transferred dogs and cats has been increasing year by year. These are good trends, and we hope to continue them in the future.

To this end, we believe it is important to spread awareness that there are alternatives to pet stores when buying animals. To begin with, the number of killings that occur by pet stores is not small. The animals sold at pet stores are young and healthy. In some cases, old dogs and cats that are not bought are sent from pet stores and killed. For the sake of human business, vicious breeders repeatedly breed, create lives they cannot take care of, and then kill them. This should not happen. In order to break down this situation, we believe that pet stores should also be cracked down on.

In Germany, an advanced country in animal welfare, this measure is already in place, with standards for cage size, lighting, ventilation, and heating systems, etc. In principle, dogs and cats are not sold in pet stores because it is practically unprofitable to do business if all these requirements are met. Therefore, in Germany, the culture is to buy directly from breeders if you want to keep a dog or cat. Germany is also committed to animal protection, and the "Grundgesetz für die Bundesrepublik Deutschland" (Basic Law of the Federal Republic of Germany) is the top-level law that forms the basis of German citizens' lives, and is equivalent to the "Constitution of Japan" in Japan. In Article 20a of this law, the term "animal protection" is clearly stated. In other words, in Germany, "animal protection" is defined as being of equal importance to such principles as human rights, freedom of religion, and protection of property. On the other hand, the Constitution of Japan has no section on animals, and the basic law on animals is the "Law Concerning the Protection and Management of Animals" (the so-called "Animal Welfare Law"). In addition, the "Tierschutz-Hundeverordnung (Animal Protection-Dog Regulations)," a set of dog-specific regulations, contains detailed information on what dog owners must observe when keeping their dogs. In this way, owners are made to feel responsible for their animals and are prevented from abandoning them.

In addition, Germany has eliminated the use of kill shelters, and the German Federation for Animal Protection operates "Tierheim" to create a no-kill environment. It is also necessary to obtain a license to operate a pet store, and there are only a few pet stores in Germany. In Germany, there is a widespread awareness that owning a dog naturally means going through training. Public transportation such as trains and buses can be ridden with dogs.

In the U.K., private animal protection organizations operate animal shelters and provide assistance to pet owners. Additionally, the idea that dogs are companions and family members is deeply ingrained in the country.

Although the number of dogs and cats being killed is decreasing, there are still dogs and cats that end up being killed.

We thought that by spreading the examples of such advanced animal welfare countries to other countries, animal welfare could be strengthened in the world as a whole. We also thought that the creation of a universal animal welfare regulation would lead to the strengthening of animal welfare in the world as a whole. Although cultures differ from country to country, I believe that establishing minimum rules in accordance with each culture will serve as a catalyst to promote animal welfare.

Current challenges include strengthening animal welfare laws around the world, making efforts to inform civilians about animal welfare more seriously, and increasing aid to animal welfare facilities.

3 Conclusion

In conclusion, in order to reduce the number of dogs and cats being killed, we need to establish a method to secure staff for shelters to imitate the system in Germany and other developed countries. And enact universal laws to control animal welfare around the world, and change the perception of pet stores, which is currently the norm in some countries such as Japan. In particular, the government needs to strengthen its crackdown on pet stores and malicious breeders, and recognize the current status of animal welfare around the world.

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To Extend Healthy Life Expectancy by Oats

~ Creating recipes that suit the community~

5420 Nieda Riko

Abstract

This research aims to extend healthy life expectancy by promoting the use of oatmeal, which is effective in preventing and improving heart disease and lifestyle-related diseases, in the United States. Since obesity is one of the causes of shortened healthy life expectancy, and oats, the raw material of oatmeal, are grown in high latitude regions, the target region was set in the United States, where the obesity rate is high. The goal is to integrate oatmeal into daily life by using it in American cuisine. However, since we have yet to come up with an American-style oatmeal recipe, we would like to continue our research mainly by creating a recipe, practicing it, and repeatedly improving it. In the process, I would like to have several Americans in my father's office taste the oatmeal to get their opinions and make it more palatable.

1. Introduction

The purpose of this study is to extend healthy life expectancy worldwide using oatmeal, which has become popular due to the recent increase in health consciousness. Since one of the causes of reduced healthy life expectancy is obesity, and oats, the raw material of oatmeal, are grown in high latitude regions, I set the target region as the United States, which has a high rate of obesity. I thought it would be useful for my research because it was eaten to maintain body shape, and because it improves the condition of the stomach and helps people to lose weight. Previous research has shown that oatmeal is a low GI food (a food with a slow rise in blood glucose levels after eating), and that it is effective in reducing obesity rates and extending healthy life expectancy by decreasing bad cholesterol and regulating the intestinal environment. It is said that it was originally used mainly as livestock feed, and only after the 19th century it came to be treated as a food. In recent years, consumption of oatmeal as a food has been increasing due to growing health consciousness, but it is still extremely low. Therefore, I believe that oatmeal can be more efficiently promoted by coming up with oatmeal recipes that fit the food culture of the United States.

2. Discussion and implications

I(1) About Oatmeal

•Types

Rolled oats: Oats steamed and then pressed on a roller

Quick oats: Rolled oats that have been further crushed into smaller pieces

Instant oats: rolled oats heated with water and dried again

These three main types are available in stores. My own experience with them is that rolled oats are suitable for rice conversion, quick oats are suitable for making sweets and sweet snacks, and instant oats are suitable for times when there is little time to make them.

•Nutrients included

*One serving: 30 g oatmeal (before adding water), 150 g white or brown rice (1 cup), 60 g bread (1 slice of 6 slices)

	energy	protein	fat	calcium	carbohydrate	dietary fiber	sugars	GI score
oats	105	4.1	1.7	14	20.7	2.8	17.9	55
white rice	234	3.8	0.5	5	55.7	2.3	53.4	84
brown rice	228	4.2	1.5	11	53.4	2.1	51.3	56
plain bread	149	5.3	2.5	13	27.8	2.5	25.3	91

The chart shows that oats have a much lower GI (= increase in blood glucose level after eating) and carbohydrates compared to other foods. In addition, its fat content is almost three times higher than that of white rice.

•Effects

(i) GI and carbohydrates

To lower blood glucose levels, insulin is released, which causes glucose to be absorbed into cells throughout the body, in the order of muscle, visceral organs, and fat. Glucose

absorbed by the liver and muscles is transformed into glycogen, a source of energy, which is stored. However, when large amounts of glucose are rapidly ingested, the liver and muscles are not able to process it, so insulin synthesizes glucose into triglycerides, and stores it in fat. This results in a larger fat mass. Furthermore, if people habitually consume large amounts of glucose, the ability of insulin to take up glucose decreases, which is called insulin resistance, and when insulin resistance occurs, the body secretes even more insulin because of hyperglycemia. When insulin resistance occurs in muscle, which has a high glucose uptake capacity, more glucose is taken up by fat, and fat tissue becomes larger and larger.

Therefore, low carbohydrates and low GI make it harder to raise blood glucose levels, and less likely to cause fat tissue to grow, which is a perfect characteristic for improving obesity.

(ii) Lipids

I mentioned that oatmeal is higher in fat than white and brown rice, but it is worth noting that it is particularly high in polyunsaturated fatty acids, which are essential fatty acids.

食品成分	廃棄率	エネルギー	水分	たんぱく質	脂質	炭水化物	灰分	食塩相当量	脂肪酸総量	飽和脂肪酸	一価不飽和脂肪酸	多価不飽和脂肪酸	n-3系多価不飽和脂肪酸	n-6系多価不飽和脂肪酸
	単位	%	kcal	g	g	g	g	g	g	g	g	g	g	g
穀類/えんぱく/オートミール	0	350	10.0	13.7	5.7	69.1	1.5	0	(4.90)	(1.01)	(1.80)	(2.09)	(0.09)	(2.00)
穀類/こめ/ [水稻穀粒] /玄米	0	346	14.9	6.8	2.7	74.3	1.2	0	2.35	0.62	0.83	0.90	0.03	0.87
穀類/こめ/ [水稻穀粒] /精白米/うるち米	0	342	14.9	6.1	0.9	77.6	0.4	0	0.81	0.29	0.21	0.31	0.01	0.30
TOTAL		1038	39.8	26.6	9.3	221.0	3.1	0	3.16	0.91	1.04	1.21	0.04	1.17

Polyunsaturated fatty acids are divided into n-3 and n-6 series, and the table shows that the n-6 series accounts for most of them. These include linoleic acid and α -linolenic acid. Linoleic acid reduces cholesterol and prevents atherosclerosis. Alpha-linolenic acid also reduces the risk of cardiovascular disease and helps the body produce eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), which are also essential fatty acids. Since these components are not available in white or brown rice, their intake through oatmeal is effective.

I(2) About Healthy Life Expectancy

Regarding the definition of healthy life expectancy, the Ministry of Health, Labour and Welfare (MHLW) states that "healthy life expectancy is an index of the average length of time a person can be expected to live in a certain healthy state," which is not similar to the average life expectancy. Its calculation method is based on the Sullivan method*. (*Sullivan method: Assuming a situation where 100,000 people are born every year without fail, and giving the age-specific mortality rate and the age-specific "healthy/unhealthy" ratio to it, the "total survival period in a healthy state (steady-state population of healthy people)" is obtained, and this is divided by 100,000 to obtain healthy life expectancy).

I(3) Dietary characteristics of different continents and regions

When one thinks of America's famous cuisine, fast food is the first thing that comes to mind, but it is not always a hamburger at every meal. Americans (especially city workers) are pressed for time, and two-thirds of all Americans go to work or school without breakfast. The reason for this is, as mentioned earlier, lack of time, but also lack of appetite. For the remaining one-third of Americans, cereal with milk is the standard, and there are many cereal flavors and combinations, such as yogurt instead of milk.

As for lunch, it may be just as you imagine, but many urban workers are busy and choose fast food, which is readily available. McDonald's, Wendy's, Taco Bell, etc., but these fast foods are not very healthy.

	指標値(1日)	商品合計値	マックフライポテト®(M)	コカ・コーラ(M)	ビッグマック®
製品重量 (g)	-	777	135	425	217
エネルギー (kcal)	2700	1075	410	140	525
たんぱく質 (g)	65.0	31.3	5.3	0.0	26.0
脂質 (g)	75.0	48.9	20.6	0.0	28.3
炭水化物 (g)	388.1	127.9	51.0	35.1	41.8
カルシウム (mg)	750	168	18	7	143
鉄 (mg)	7.5	3.2	1.0	0.0	2.2
ビタミンA (μg)	900	74	0	0	74
ビタミンB1 (mg)	1.40	0.41	0.24	0.00	0.17
ビタミンB2 (mg)	1.60	0.27	0.03	0.00	0.24
ビタミンC (mg)	100	18	16	0	2
食物繊維 (g)	21.0	7.4	4.8	-	2.6
食塩相当量 (g)	7.5	3.4	0.8	0.0	2.6

Table shows that this Big Mac set is high in calories and fat, while lacking in minerals, vitamins, and dietary fiber, making it nutritionally unbalanced.

Since the website I used was that of McDonald's Japan, I thought that the size, quantity, and calorie content might be different from the products sold at McDonald's in the U.S. However, I compared the calorie content of the Big Mac sold in Japan and the U.S. respectively on each official website and found that The difference in calories was about 25 kcal, indicating that there is not much difference regarding the size of the burger. However, in the U.S., the size of the drink is much larger than in Japan, and the difference in calories for a Coca-Cola M is about 70 kcal. In other words, you will consume more calories when ordering a Big Mac set in the U.S. than in the table above.

3. Conclusion

The current conclusion is to extend healthy life expectancy by promoting oatmeal in the United States, which is effective in preventing and improving heart disease and lifestyle-related diseases. The goal is to integrate oats into daily life by using them in American cuisine. However, since we have yet to come up with an American-style oatmeal

recipe, we would like to continue our research mainly by creating a recipe, practicing it, and repeatedly improving it. In the process, I would like to have several Americans at my father's workplace taste the oatmeal to get their opinions and make it more palatable.

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Expansion of basketball league's market scale

～spread of watching sports～

ID 5421 Nishimura Nana

○Abstract

In order to expand the market size of the B-League, I considered two areas. The scale of NFT in the B-League is still small, and there is room for improvement. Also many B-League teams have little or no information about wheelchair seating on their websites. I believe that expanding consideration for the disabled in the Japanese B.league will help raise awareness of the welfare of the disabled around the world.

1 Introduction

I like basketball very much and I want to do a study related to basketball. Also I would like everyone to know how exciting basketball is. In the end, I would like society's economy to be good by the basketball league markets.

This research's effect is the fullness of barrier free, economic growth in Japan and the new value of the basketball league.

research question: What can we do to spread the basketball league's market scale?

<hypothesis ①>

B.league may make a new market by making new products or sites for foreigners.

<hypothesis ②>

More people may come to see basketball games by arranging the environment of watching sports for potential audience.

As with previous research, there is the research “ The Realities and Issues of Watching Sports with People with Disabilities and the elderly -Based on the result of a questionnaire survey of those who watched together.”

Next, I will explain the way to do the research.

<hypotheses ①>

①research B.league's market and goods

②research NBA' market and goods

③compare with B.league to NBA

④research other country or league's attempt

⑤consider what attempt B.league can do

<hypothesis ②>

①ask people in wheelchair if they feel unusual when they see the basketball games

②research consideration for handicapped in Japan

③go to the basketball games and research the reality

④research consideration for handicapped in foreign countries

⑤compare the consideration watching basketball games with B.league to NBA

⑥take a survey and understand the problem's detail

⑦suggest the improvement plan to make evryone enjoy watching the games

2 Discussion and implications

<hypothesis ①>

According to the economist in America, Igor Ansoff, there are four ways to spread the market scale.

1.penetration of the market (existing market × existing goods)

2.development of goods (existing market × new goods)

3.cultivation of new market (new market × existing goods)

4.diversification (new market × new goods)

I researched the B.league and NBA

[B.league]

existing market :Japan, Philippines

goods:

- watching basketball at the gym
- watching basketball on the Internet
- cheering goods
- goods on the Internet
- NFT

[America]

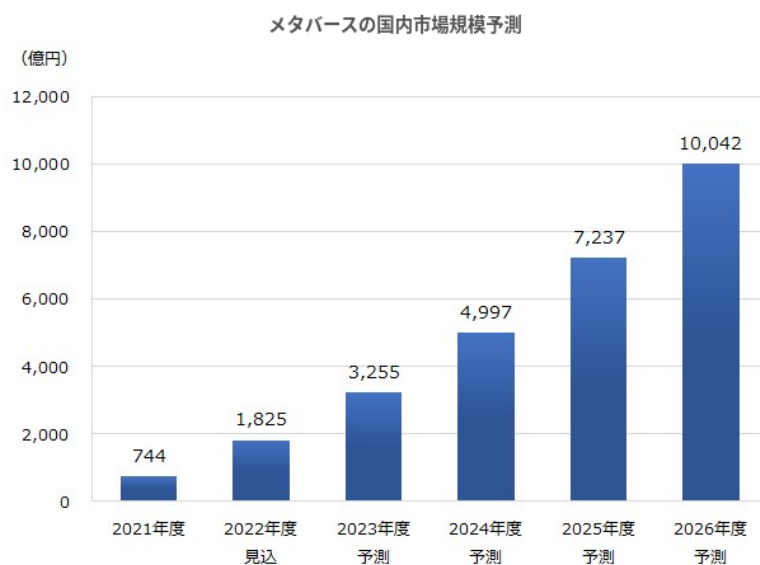
existing market :Japan, America

goods:

- watching basketball at the gym
- watching basketball on the Internet
- cheering goods
- NFT

*NFT

It's the Non-Fungible Token. NFT is the system which we can prove that the thing is only by using the technology of blockchain. A lot of people pay attention to the system as a rarity value. (According to B.League)



Also, I researched metaverse related to NFT. According to the Yano Economy Research Institute, the metaverse's market will become very large after five years.

<hypothesis②>

According to the research, “Condition and Problem of watching basketball for alternative person and old person ~According to the result of the survey to the caregiver who watched basketball with alternative person ~”, a lot of people wants the services, priority use of bus, free shuttle bus, car park near the venue’s entrance. Therefore, there are some places which is not enough service for alternative person to watch sports.

Next,I put the date from “B.LEAGUE 2019-2020 season guidelines of home arena together. I knew that there are some systems for people with physical disabilities.

[the condition they must have]

- chair for caretaker
- There is a toilet for alternative person near the seats for those people
- There is a elevator which alternative person can use near the seats for those people
- The way which an alternative person passes is safe for both the alternative person and the other person.
- There is always the seat space for an alternative person. According to the needs,they can get the seats for people with physical disabilities over 0.5% of the number of seats
- There is a car park for alternative person and it’s near the venue’s entrance

[the condition they should have]

- All the chair have seat back

Also, I researched the location of seats for alternative people and how to get the seats. Please look at Information③ and Information④. It’s different over half number of the basketball teams from ordinary people how alternative person to buy tickets. Also, There are seats for people who are in a wheelchair at only first floor or second floor at about 36% of the basketball team and I can not expect where is the seat for the people on the Internet at about 18% of the basketball team. This is one of the reason it’s difficult for people with wheelchairs to go to the game. In 2017, B.League invited the children with bad disease and their family to go to the basketball game as one of the social activities. At the events, these participants asked B.League to increase providing information about barrier-free and improving barrier-free about equipment and tool. However, there isn’t enough information for alternative people and B.League should improve quickly.

Next, I compared the Chiba Jets’ and Ryukyu Golden Kings' homepage.

target: Chiba Jets Funabashi, Ryukyu Golden Kings, Funabashi arena, Okinawa arena
result: There are some pictures and information about the seats of wheelchairs on only Funabashi arena's homepage.

Therefore, there isn't enough information for alternative people.

I went to Ota Civilization Exercise Park and watched the game ,Gunma Crane-thunders vs Chiba Jets Funabashi, on October 10 th as the research's field work. I wrote about the experience and feeling.

- There is a person with physical disabilities who watched the game as good as ordinary people by moving the pipe chair

↑A lot of people may be influenced by COVID-19 and the active might succeed.

- There are no pamphlet
- There is a shuttle bus between near station to venue.
- There are long stairs so it was hard for some people.
- There are many roads which is different for people with wheelchairs to go through in the venue
- There are pamphlets at a station near the venue
- At every game, it's dangerous for people with wheelchairs because sometimes the ball player hits chairs and the audience.
- The performance was good for everyone

Next, I researched the condition of the wheelchair seats.

According to Information③ and information④, there are few difference about the rang and the number of seats alternative person can choose in America. Also the information was made in 2015 so that there have been good services before the information was made.

Therefore, I will introduce you to the differences in attention for people with physical disabilities between Japan to foreign countries.

[Japan]

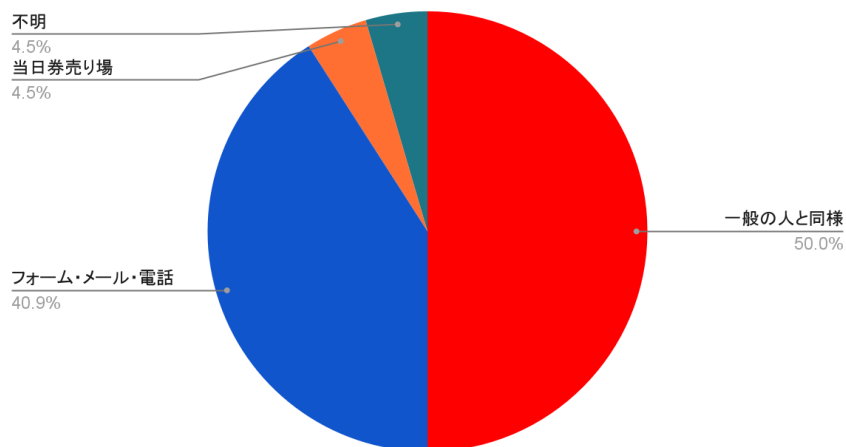
- There are few location which people with physical disability can choose
- the number of seats is a small
- there is few information for alternative person

[America]

- There are many location which people with physical disability can choose
- the number of seats is large
- there are lots of information for alternative person

information①purchase way of b1 League wheelchair (making by the homepage,B1 league's homepages)

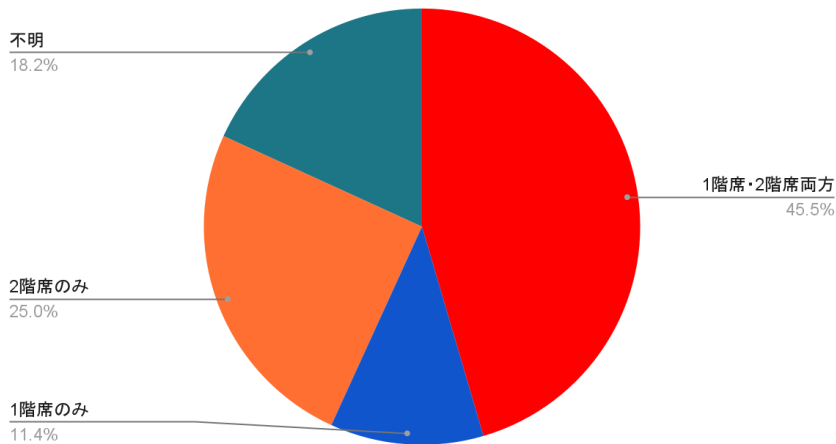
b1リーグ車椅子席購入方法別割合



information②

b1 league's Percentage of wheelchair seats located on each floor of each arena (making by the homepage,B1 league's homepages)

b1各アリーナごとの車椅子席の階別有無



information③ "International Comparison of Wheelchair Seating in Stadiums: Correlation between Price and Number of Seats by Hideto Kijima"

アメリカ	車いす席の位置	価格	介助者
NYヤンキース	全てに有り	100	同じ
テキサスレンジャース	全てに有り	100	同じ
インディアナポリス	全てに有り	100	同じ
シーホークス	全てに有り	100	同じ
ヒューストン・ロケッツ	全てに有り	100	同じ
デンバー・ナゲッツ	全てに有り	100	同じ

information④ "International Comparison of Wheelchair Seating in Stadiums: Correlation between Price and Number of Seats by Hideto Kijima"

アメリカ	座席数	車いす席	割合
NYヤンキース	50,086	506	1.01
テキサスレンジャース	49,115	475	0.97
インディアナポリス・コルツ	63,000	1,200	1.90
シアトル・シーホークス	67,000	1,400	2.09
ヒューストン・ロケッツ	18,300	159	0.87
デンバー・ナゲッツ	19,155	298	1.56
	平均		1.40

3 conclusion

<hypothesis ①>

B.League uses NFT later than NBA. Thus, it's expected that the B.league will increase the income and make the market large.

<hypothesis ②>

In order to create an environment where a wide range of people can enjoy basketball games equally, it is necessary to improve the web page, increase the number of wheelchair seats and the range of wheelchair seats available for selection and purchase.

I propose the following items for the enhancement of the web page.

<Mandatory contents>

- the way to purchase and location of seats
- Description of facilities (photos, evacuation routes, etc.)

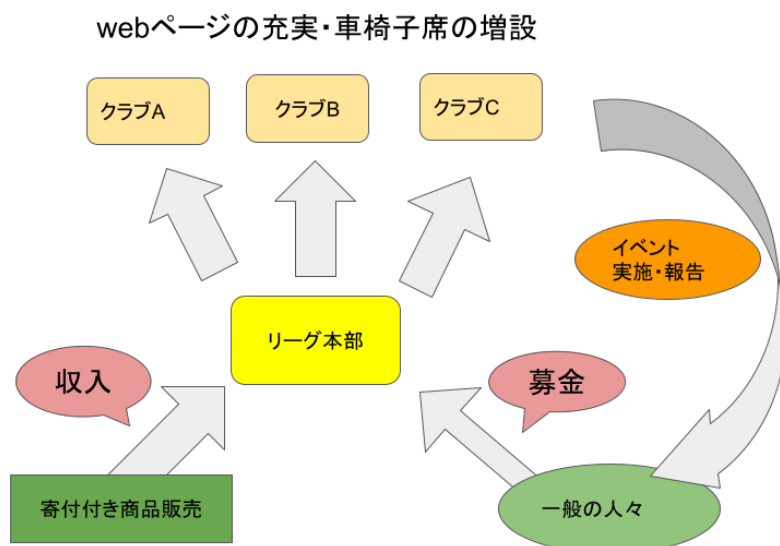
<Contents that should be included>

- 3D seating chart
- Chat room

I am also considering information⑤ for funds to enhance the web page and increase wheelchair seating. To explain, funds will be raised through fundraising and donated products. The funds will be used to increase the number of wheelchair seats and improve the webpage. And by reporting the results and holding events with priority given to wheelchair users, the general public will be motivated to donate money and purchase donated products. Then, raise funds by circulating them as shown in information⑤.

In the future, I would like to look for new issues and find solutions. I would also like to make our proposal more concrete.

Information⑤How to collect the fund <suggestion>



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History class and discrimination

-history from a wide perspective -

5422 Akari Hanamura

Abstract

History education can have a great impact on the international community. I decided to conduct this research because I believe that biased history education causes discrimination, which should be eliminated as soon as possible. As a proposal, I would like to develop an application that functions as "education to nurture." Discrimination that arises from history lies in learning history from a superficial and narrow perspective. I think the most effective way is to create something that allows people from all over the world to interact with each other. There are two functions of the app. The first is the chat function. Students from different countries can share the knowledge they have learned in their own country in the app, and it can be inferred that it is effective in broadening their perspectives. The second is a textbook comparison function. Textbooks from each country are posted and can be viewed freely. If there is an event that interests you, you can easily go check how it is depicted in other countries. There are many challenges, but this app will bring a great effect in terms of coming into contact with different values.

1 Introduction

It is not rare for Japanese students to be bullied in classes about the attack on Pearl Harbor, where they were taught that Japanese were cruel. Furthermore, recently, we often see boycotts and demonstrations against Japan in the news. I think these are things that happened based on history education. The ultimate goal of this research is to reduce the discrimination caused by such history education. According to Professor Tomoko Ikegami of Osaka City University, it is generally known that people show a favorable attitude toward outgroups while repeatedly having intimate contact with them. In addition, according to Professor Hiroshi Sanuki of Hosei University's Career Design Department, "Education should take a value-neutral stance in the sense that it should not be "instructed" by concluding which choice is correct." Based on these, I thought of developing an application. As mentioned above, the discrimination that arises from history lies in learning history from a superficial and narrow perspective. I think the most effective way is to create something that allows people from all over the world to interact with each other. Two functions of this app are the chat function and the textbook comparison function. I'm going to research more about the effective ways to foster mutual understanding and ask opinions or advice to authorities to make my research more effective.

2 Discussion and implications

According to Professor Hiroshi Sanuki of the Faculty of Career Design at Hosei University, "Education should take a value-neutral stance in the sense that it should not conclude which choice is correct and "instruct" it." Also, according to Che Syoung, South Korea emphasized that Koukuri(高句麗) "defeated Japan" in the incident in which the forces of Wa(倭) and Koukuri collided. On the other hand, Japan emphasized that "Wa" crossed the sea and fought against the powerful Koukuri. "From that, we can see that the same history has been planted with different views. In addition, according to Professor Koei Honda of Miyagi University of Education, education related to values (including historical views) is divided into "education to teach" and "education to nurture." I thought it was necessary to work differently on the two parts. In "teaching education," objective "basic knowledge" is taught, and students form their own sense of values using "basic knowledge" as an important material. Reassessing historical images and other acquired information, recognizing it as a process of forming one's own sense of values (historical view) under the freedom of sense of value formation, and getting involved in it. He grasped the teacher's approach as "education to nurture." At present, "education to teach" is the mainstream, but I thought it would be difficult to say that "education to nurture" is being done enough. Professor Tomoko Ikegami of Osaka City University also says that it is generally known that people who have repeated close contact with outgroups show a favorable attitude toward them.

3 Conclusion

I believe that what I can do is to develop an application (named "history from a perspective viewpoint") that functions as an "education to nurture." As mentioned above, the discrimination that arises from history lies in learning history from a superficial and narrow perspective. I think the most effective way is to create something that allows people from all over the world to interact with each other. In fact, through using this app, students can exchange their opinions freely, and as a result, discrimination can be reduced. As a function of this app, let me raise two. The first is the chat function. Please refer to Figure 1 for the state of the conversation. Students from different countries can share the knowledge they have learned in their own country here, and it can be inferred that it is effective in broadening their perspectives. Conversation is smooth because the translation is automatic. It is thought that there are times when they speak based on the textbook comparison function, which will be explained later. The challenge is that conflicts of opinion within the chat may result in discriminatory remarks. To prevent this, a supervisor will be appointed, and if excessive discriminatory comments are made, the person in question will be reported using the reporting function (students will also be able to report such comments). However, the difficulty is that conflicts of opinion are sometimes meaningful and are the core of a discussion. It is difficult to decide how far

to go in such cases. The second is the function to compare textbooks. Textbooks from different countries are posted and can be viewed freely. If there is an event that interests you, you can easily go and check how it is portrayed in other countries. However, there are many challenges, and the biggest concern is that this application may induce discrimination, especially if there is a reporting function. To solve this issue, we considered creating a program that would deepen students' understanding of the other country in stages, but we wanted to create a space where students could learn about the historical events they care about at their own leisure, so solving this issue would be difficult. However, the application would still have a great effect in terms of exposing students to different values. I think this will lead to the SDGs "quality education for all".



figure1

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・差別・偏見研究の変遷と新たな展開

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池上知子(大阪市立大学大学院)

・生徒の価値観形成の自由と教育の「中立性」

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佐貫浩(法政大学キャリアデザイン学部)

Objectification of pain

~the future medicine seen from “pain”~

5423 Hara Ryuta

○Summary of Research

I propose the objectification of pain in order for doctors to understand patients' symptoms accurately and to make doctors' diagnosis smoother and more accurate. There is a method to objectively know the pain by giving radio waves to the brain in the situation of brain waves, but it is time-consuming and costly. In addition, it does not facilitate the doctor's diagnosis. Therefore, we thought it would be better to use this method in limited situations, such as when the doctor performs a normal medical examination and the patient has difficulty in difficult cases or in properly communicating his or her symptoms.

1 Introduction

The emotion of "pain" is one that we have all experienced. This emotion is very subjective, even though it has a rather large meaning in medicine. When I went to the hospital some time ago with a leg injury, I was very distressed by the question "what kind of pain?" So my goal was to make this pain objective in order to increase efficiency in medical situations, which in turn would lead to the development of medicine in the world as a whole. I will examine the methods currently used in diagnosis to determine the degree and type of pain, and search for their problems and merits. Then, from there, we came up with better ideas for objectifying pain, finding good and bad points about them and ways to improve them. We also created a system to better use them.

2 The Main Thesis

Now, when assessing pain in a diagnostic setting, important aspects to consider are the intensity and nature of the pain, the degree of daily life disturbance, quality of life, and the mental, physical, spiritual, social, and environmental aspects of the pain. First, there are many ways to look at pain intensity. For example, there is the Visual Analogue Scale (VAS), which

shows the patient a black line 10 cm long (the left end is "no pain" and the right end is "maximum imaginable pain"), and the Numerical Rating Scale (NRS), which has 11 levels from 0 to 10, with 0 representing no pain and 10 representing maximum imaginable pain. The Verbal Rating Scale (VRS) is a stepwise scale in which the patient is asked to answer on a 4-point scale.

The Verbal Rating Scale (VRS), a 4-point scale, and the Face Rating Scale (FRS), which determines the intensity of pain based on the patient's facial expression. These are all based on the subjective judgment of the patient or the physician. Conversely, a possible objective method is to use a medical device that calculates the degree of pain as a numerical value, calculated from the response to a weak electric current stimulus that does not cause pain. By making good use of this device to objectively determine pain, it is thought that more accurate and efficient diagnosis can be made. PaMeLa, a start-up company from Osaka University, has developed a technology to visualize a patient's "pain," using AI (artificial intelligence) to automatically calculate the level of pain based on brain wave patterns, which may enable objective evaluation of the degree of pain that relies on the patient's subjective judgment. It has the potential to objectively evaluate the degree of pain, which relies on the patient's subjective view. The "Pain Monitoring System (PMS)" being developed by PaMeLa is a system in which the user wears a wearable electroencephalography (EEG) with eight electrodes on the forehead, and the EEG data output is analyzed on the cloud and displayed on a monitor independent of the EEG monitor, along with the independently developed The output EEG data is analyzed on the cloud and displayed in real time on a monitor independent of the EEG monitor as a "Pain Score," a 100-level pain index developed by the company. The unique feature of using EEG as a marker is that the device will be used for post-operative pain monitoring in FY2023, and nurses will be able to call out to patients if the device detects any abnormality.

Objective evaluation with current stimulation above would be time-consuming and costly. It also does not facilitate the doctor's diagnosis, so we suggest that the system be used in limited situations, such as when the doctor performs a normal medical examination and the patient has difficulty in difficult cases or in properly communicating his or her symptoms.

The PaMeLa system would also take more time than usual, so we think it is better to use the system in the same way as the current stimulation .

3 Conclusion

I believe that one of the solutions to make the flow of diagnosis more accurate and smoother is to create a system in which objective diagnostic methods using EEG and current stimulation are not used for every diagnosis, but are used on a limited basis for those who have difficulty in communicating their pain and symptoms when the physician deems it necessary.

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Sports SDGs

～Achieving the SDGs through sports～

5424 Kouki Fukasawa

Outline of Research

There are many opportunities to experience sports in today's world, such as the Summer and Winter Olympics, Paralympics, World Cup and World Championships in each sport, and, although not on a global scale, high school soccer championships and high school baseball games such as Koshien. Most of these events are broadcast in all regions of the world, so it is possible to experience sports other than the ones you play or watch on a daily basis. In addition to being able to watch a variety of sports, many people who do not often watch sports or who are too busy studying or working to go to the games can also watch them. In this way, the world is involved with sports in many ways. However, the efforts to promote the SDGs, such as the efforts being made by sports teams and each sport, are not well known. In order to inform more people about them, it is necessary to promote what they are doing. This study is about that.

1. Introduction

The purpose of this study is to make more people aware of the SDGs efforts being made by sports companies, clubs, and competitions as a whole. The hypothesis of this research is that if we appeal only in the middle of a game, we can only appeal to people who are watching the game (people who are interested in the team or the sport). Therefore, it is necessary to propose what can be done to make people in the local community aware of the games by putting them on TV commercials or taxi cabs, etc., and then gradually increase the scale of the games so that more and more people will become aware of them. We should also increase the number of companies and clubs that are involved in the project so that efforts can be made from a variety of angles. There are other cases in which sports empower people and contribute to the SDGs, although I am not sure if this can be called an initiative. For example, Mohammed Farah, British track and field athlete, from net news.

He won four gold medals in the Olympic games. He was a victim of human traffic. He was brought to England illegally when he was young and was made to work as a servant. As he grew up, he entered school and started track and field. It made him an Olympian. He said "sport was a lifeline." Even if we cannot become an Olympian, sports give us a manner such as greeting. Sportsmanship can be used as a means of teaching and practicing these life skills. This relates to SDGs Goal 1. No Poverty; End poverty in all its forms everywhere. In addition, something similar happened in baseball. Miyagi Prefecture-based Tohoku Rakuten Golden Eagles Motohiro Shima, who was the player's president at the time, gave a speech. "The evolution of baseball beyond the realm of sports is now being questioned. Let's show you the true power of baseball. Let's show the true power of a baseball player. Let's show the best of baseball fans. Let's work hard together! Let's support each other Nippon! We will believe in the underlying strength of baseball and play as hard as we can. We ask for your cooperation for the sake of the disaster-stricken areas." Not only that, but it also they won the Japanese baseball championship after this. These things empowered not only the people living in Tohoku, but Japan as a whole. In this way, sports can promote the post-disaster recovery process by creating bonds and a sense of unity with disaster victims. This relates to SDGs Goal 13, Climate Action; Take urgent action to combat climate change and its impacts.

2. This paper

The Sports Agency has entered into a partnership with the Bill & Melinda Gates Foundation called "Our Global Goals". The Agency also distributes video messages from famous athletes and others on the International Day of Sports for Development and Peace. It is opening the Kansai SDGs Forum as the theme of employee contribution through sports - Japan opening with SDGs.

In the J-League, various clubs are also involved in various activities. For example, the Shimizu S-Pulse has changed the rules to allow anyone to participate in soccer events (relate to SDGs Goals 3), players visited schools, created an environment for women's soccer, hired female staff (relate to SDGs Goals 5), and is Japan's first carbon offset club (relate to SDGs Goals 13).

However, almost all of the companies and clubs that are still working on this issue are not yet fully committed.

3. Conclusion

I was able to learn about various initiatives because I was interested in them, but I would not have known about them if I did not do this research. In fact, I only know my favorite soccer clubs and what they are doing before games, so I realized that I need to do more to promote players and club activities. If I don't do so, I don't think people will know about the efforts they are making. I also think that we need to increase the number of companies and clubs that are working on the SDGs and make efforts from many angles in the future.

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Promotion of paperless

Saving resources and improving work efficiency

Forest Paperless AI

5425 Mizuide Kaito

Introduction

The purpose of this research is to contribute to the control of deforestation by promoting paperless operations. First, the reason I have wanted to prevent deforestation is that more and more forests which help prevent global warming are being cut down. I was interested in global warming, so I did some research and found that one of the causes was the decrease in forest area. That's why I decided to curb deforestation. When I investigated the causes of the large amount of deforestation, I found that it was being used as fuel, and the shift to land use. I thought that I could contribute to the control of deforestation by reducing the amount of paper used, so I decided to promote a paperless society.

Next, this study is aimed at Japan. I will explain why I chose Japan, and how much people can contribute to reducing the consumption of wood by reducing paper in Japan. First of all, when I checked which country has a lot of paper consumption, I found that Japan has the sixth largest. It was found that the world average consumption of paper per capita was 54 kilograms, while Japan was quite high at 202 kilograms. Also, when I looked into the use of Japanese wood, I found that the paper and paperboard accounted for 42%. From there, I thought that Japan should reduce paper, and Japan would be able to significantly reduce the consumption of wood by reducing paper.

Regarding paper consumption and paperless on the Internet, I examined the advantages and disadvantages of paperless, successes, failures, progress, etc.

Discussion and implications

First of all, about the progress of paperless, 36% of companies did it actively, and 39% of companies did it to some extent. In total, it's 75%, but I thought I should be able to increase the percentage of companies that have actively done so. Therefore, in order to promote paperless, I examined the advantages and disadvantages, as well as what we can learn from failure cases and success cases. First of all, the benefits are reducing the cost of paper, improving operational efficiency, and strengthening security. Disadvantages are system failure, cost, time, and effort to implement. Next, I will explain the successes and failures. As a successful example, I examined the case study of JR West. In JR West Japan, it first started to introduce it at the executive meeting. At first, there was a negative opinion about it, but it seems that they understood that it could be used while it continued. After that, it was introduced step by step, and it seems to have succeeded safely. There were no detailed examples of failures, but the causes of frequent failures are lack of understanding of employees, differences in IT literacy, and anxiety about system failures. From this information, I would like to consider how to proceed with paperless.

First of all, I think that what needs to be solved is the employee's lack of understanding and IT literacy. The company is operated by the work of each employee. If there is a lack in the employee's understanding, awareness, and ability to IT, even if you try to promote paperless,

it won't work. Then, when I examined why there is a lack of understanding and consciousness, I found that it is because some employees are used to working on paper or have to learn new things. So I'm thinking of using AI. I think that by utilizing AI, it can support people who are resistant to paperless.

Conclusion

In conclusion, I think that I can promote paperless by proceeding step by step, creating a company that supports paperless, and using AI. As for future prospects, in order to promote paperless outside of Japan, we will investigate the progress of paperless and the reasons why paperless will not progress, and consider whether the solution in Japan can be applied. I also want to think about the problems of this solution and make it a better solution.

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1. Background, Significance, and Purpose of the Study

Since my third year, I have been studying Japanese food in order to find out how we can spread the correct Japanese food to the world after watching a TV program on how to fix the wrong Japanese food. I hope that by conducting this research, the number of wrong Japanese foods in the world will be reduced as much as possible. The research question of my study is how can we spread Japanese food.

2. Research Methodology

I proceeded with my research by making good use of the information I have done so far. I spoke with foreign employees at the Gunma Royal Hotel and conducted research on arrangements. We also contacted Mr. Alai of the Japan Food Research Institute and received a variety of information. Using this information as a reference, we conducted research on the Internet.

3 Results of the research

First, I considered what kind of arrangement would be best. The question I had was how much of the arrangement would be acceptable and how much would be an improvement.

I asked the people at the Japan Food Research Institute (JFRI) about the following questions. About England and Scandinavia

The most common Japanese foods eaten are sushi, udon, and tempura.

What kind of ingredients are used for Japanese food?

Both. If it is a manufacturer that produces locally, both the locally produced portion and the portion purchased from Japan are on the market. (e.g. KIKKOMAN Soy Sauce... both the portion manufactured at the factory in the Netherlands and the portion produced in Japan are available in the market.)

Chinese and Korean owners often use soy sauce made in China or Thailand.

Seafood is mostly procured locally.

Differences when reproduced

There are some (but not all) differences in each dish.

Teriyaki => Spicy seasoning with chili peppers is used.

Tempura => served with Thai sweet chili sauce

Tempura => served with Thai sweet chili sauce • Menus that combine Japanese food with spices such as pak choi and chili are also available.

About EU countries

The most common Japanese foods eaten are sushi, udon, and tempura.

Are they faithfully reproduced?

In the case of Japanese owners (chefs), the food is approximately faithfully reproduced. However, restaurants with little or no Japanese involvement (Asian-owned) do not reproduce the same dishes. It is topped with colorful toppings and a sweet sauce of teriyaki or eel sauce. Nigiri Sushi is mostly tuna and salmon.

In Europe, there are two types of Japanese food: those that are popular in other countries and those that are popular only in SUSHI.

France (especially Paris), Germany (especially Berlin, Munich, and Dusseldorf), and Italy (especially Milan), where there are many Japanese restaurants, are the regions where Japanese food is often eaten.

How to procure raw materials

Rice is generally a Japanese variety and originates from Italy and other countries. Only a small portion is imported from Japan and procured from China, Asia, the U.S., etc. The rest, such as vegetables, meat, fish, etc., are generally sourced from local sources.

U.S.A., Canada

Sushi, udon, tempura, etc. are the most common Japanese foods eaten.

Is the food faithfully reproduced?

Most things are faithfully reproduced.

The further you go into the countryside, the more restaurants serve miso soup, which is not a proper miso soup, but rather a thin miso soup with instant tofu mixed with granulated dashi and a little miso.

Procuring Ingredients for Making Miso Soup

Most places use local products. Chain restaurants that do business in Japan and have a strong commitment to the Japanese market may import all of their ingredients from Japan.

California.

The most common Japanese foods eaten are sushi, udon, and tempura.

Are they faithfully reproduced?

Sushi can be divided into two types: faithfully reproduced (nigiri) and arranged (maki, or sushi roll). Arranged types range from the simple Kappa-maki (California rolls with shrimp added), which began in the 1990s thanks to the success of Major League Baseball pitcher Nomo, to the very fancy ones with a variety of ingredients and toppings. Although different from traditional Japanese sushi rolls, they are very tasty. As represented by the word "photogenic," the U.S. is good at using colors and combinations of colors that "look good," and even ramen noodles are sometimes decorated with toppings that would be unthinkable in Japan. In some cases, ramen noodles are topped with toppings that would be unthinkable in Japan. Many of them are well made, and I feel that a new type of food is being created.

Ingredients used in making sushi

In the case of sushi, most of the seafood is imported from outside the U.S., not only from Japan, but also from Southeast Asia, Scandinavia, etc.

Chicago

The most common Japanese foods eaten are sushi, udon, and tempura.

Are they faithfully reproduced?

Some restaurants are able to reproduce them, but most are not.

Example.)

Sushi: California rolls and other back rolls

In the U.S., people are much more likely to associate sushi with this type of sushi.

Ingredients

If a Japanese food manufacturer like our company produces locally in the U.S., we use local ingredients.

If they do not produce locally, they procure Japanese ingredients, mainly miso.

Ingredients that tend to spoil, such as meat and vegetables, are basically procured locally.

Houston

The most common Japanese foods eaten are sushi, udon, tempura, etc.

Are they faithfully reproduced?

Houston has a Japanese population of about 4,000, so it is not yet faithfully reproduced. Personally, I was shocked to see gari (pickled ginger) used in sushi instead of beni-ginger on top of pork bone ramen.

Ingredients

The ingredients are both local and Japanese. Japanese ones are mainly carried by wholesalers.

Orlando, Central America

The most common Japanese foods eaten are sushi, udon, tempura, and teppanyaki.

Are they faithfully reproduced?

Since less than 1% of the restaurants are owned by Japanese, correct Japanese food has not been reproduced nor penetrated.

For example, the majority of sushi is rolled backwards (nori and rice rolled backwards), and the perception is that rolled backwards = sushi, rather than nigiri. However, the Uramaki is overwhelmingly more popular than the Nigiri. This is an example of a food culture that has evolved into a form that is loved by many people in Japan.

Ingredients

Some places use fish from Japan, while others use fish from other countries. As far as sushi is concerned, frozen fish for sashimi is distributed all over the world. Locally procured fish are basically fished in a different way, so there are few fish that can be eaten as sashimi.

Thailand, Vietnam

The most common Japanese foods eaten are sushi, udon, and tempura.

Is it faithfully reproduced?

I feel that they are reproduced. There are stores with Japanese owners and Japanese chefs, Thai owners and Thai chefs, Vietnamese owners and Vietnamese chefs, etc. There are cases where people open stores after studying Japanese food, and cases where people do not study Japanese food but learn how to make it as they use Japanese seasonings, and in any case In any case, I believe that they are faithful in their desire to serve delicious Japanese food.

Are local ingredients used?

We use both local and Japanese ingredients. Except for seasonings, vegetables, meat, and other perishable items are basically local. Japanese fish such as those used for sashimi and seasonings that cannot be reproduced with local products are from Japan.

ASEAN

The most common Japanese foods eaten are sushi, udon, tempura, etc.

Are they faithfully reproduced?

In Singapore, many ingredients are imported from Japan and are faithfully reproduced in many cases. In other countries, if halal food is required, halal seasonings that do not contain alcohol or meat extract are used, so it is difficult to faithfully reproduce the taste.

Regarding raw materials

Both. However, there are still few raw materials from Japan that are halal-compliant.

This is the content.

After hearing all this, I realized that Tempura and Sushi are already known in many countries. I ran into a wall here. I was wondering how much of this is arrangement and how much of it is processing. In conclusion, I thought that frogs and other ingredients that are processed are not good, and that changing the seasoning is a good thing. This would give people a good impression of Japanese food with flavors that suit their palates, and would spread to many countries.

I also thought it would be a good idea to spread the idea of such processing on the Internet.

Circle of the World through Music

~Singing for Harmonious Coexistence and Health~

5427 Yanagitsuru Taisei

abstract

This study is an investigation into the relationship between singing and health. I have been conducting this research with the goal of spreading the joy of singing, which I have learned, to children around the world. The research question was "Does singing connect us to the world and does singing lead to health?" The purpose of this research is to sing a song. For this reason, I am planning to implement the "Let's Sing Together Project." I want to share the joy of singing with children who do not have enough education due to helping their parents with their work or due to conflicts.

1,Introduction

I was in a chorus group when I was in elementary school, and I learned the joy of singing at that time. I decided on this theme because I wondered if I could apply what I learned here to my research. In my opinion, singing is the first step to connecting with people all over the world. We also believe that this will lead to SDGs Goal 3, "Health and well-being for all. " In the world, there are children who have difficulty going to school because of their parents' work, poverty, and conflicts. I hope that these children will learn the joy of singing.

I have set my research question as "Is it possible to connect with the world through singing, and does singing lead to health?" I would like to relate the research question "connecting with the world" to the sub-theme "symbiosis".

2,Discussion and implications

The ultimate goal of my research is to conduct the "Let's Sing Together Project," an initiative to sing songs together with children around the world. The purpose is to bring the joy of singing to children in poverty, children without parents, children who have to go to conflict, etc., and children who are not able to go to school to help their parents with their work. Also, I would like to be aware of symbiosis, which is mentioned in the sub-theme, in this project. Symbiosis literally means to live in the same place, but we do not mean that here. This project is to make a video of the singing and spread it around the world. In addition, we would like to learn about the current situation of the children singing and the culture of the people living there, and hope that this will lead to multicultural understanding. I would like to create an environment where people can sing together, without language barriers. For this

reason, I would like to focus mainly on "Western music," the most widely used English songs in the world.

3,Conclusion

The research concludes that it is important to sing together. A study by Kawasaki University of Health and Welfare has shown that listening to sounds or singing has a more relaxing effect on the body and mind than simply relaxing without any stimulation. It also helps to reduce the secretion of cortisol, the most important type of carbohydrate corticoid produced by the cortex of the adrenal gland. Cortisol is produced to protect the body from stress, but when it is released under stress for a long period of time, it can cause a variety of harmful effects. It also weakens the function of insulin, which leads to an increase in blood glucose levels. This graph shows that the amount of cortisol decreases before and after singing.

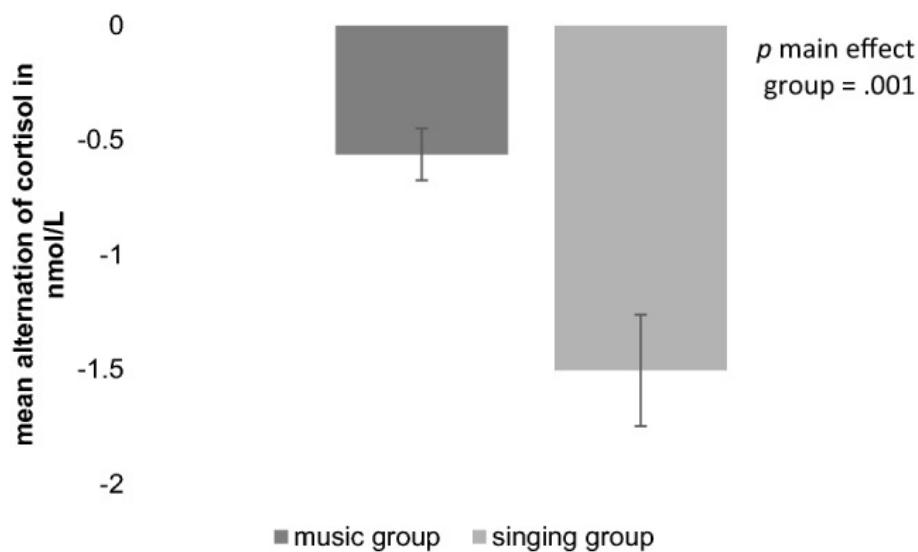


Figure 1: Changes in cortisol (music and singing groups, from left to right)

These two graphs are taken from an English-language paper that published a study conducted by an overseas research team on pregnant women that measured happiness during pregnancy.

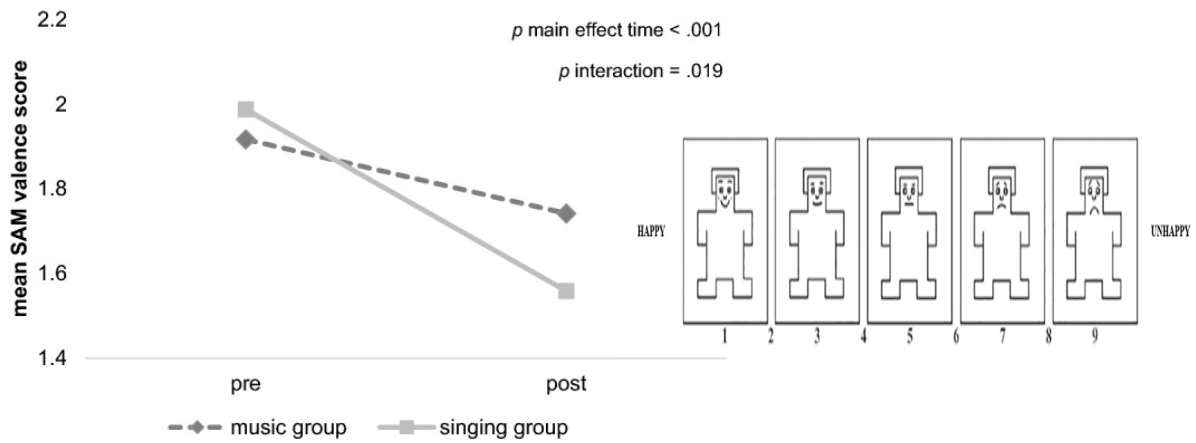


Figure 2: Change in SAM valence

Figure 3: Evaluation of SAM valence

It shows that the group of women who sang songs had a higher level of happiness than the group who listened to music. This suggests that singing is good for health, so this is one of the goals of this study.

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Rebellion for Innovation

-necessity of creating worth soon from "the law of conservation of happiness"-

class 4, in the fifth grade Yamada Hibiki

1. The purpose of research

I researched about revitalization of Gunma using simulation software of Taiko-no-Tatsujin three years ago and how to make bullet trains using a computer program 2 years ago but the result was bad. Probably the situation happened because these researches were not complete. It is usually said that half-hearted research has no worth. However, I wondered whether completed research has any worth or not. Any research has a factor of innovation at least. In this research, I examine the demand for innovation. And more, by extending the question, I judged that we should research if behavior humans do needs for the earth.

2. How to research

This research was done by examination and thinking. At first, it was started by thinking if humans should conserve the species, in other words, if we are needed for the earth. After that, I thought about the behavior that the earth needs and that only humans can do. I used "the law of conservation of happiness" to judge whether the behavior is needed or not. "The law of conservation of happiness" means that the total amount of happiness and unhappiness is the same in one person's life. Then I spread this interpretation and thought there is always the same amount of happiness and unhappiness anytime.

If the earth doesn't need humans, I present the next question: whether humans should become extinct.

3. Connection between this research and innovation

It seems that there is a contradiction by discussing it because I disagree with technology reform, in other words innovation. However, I think this research is a destructive innovation* because humans that do more things than the earth needs what humans do change the view of considering and they behave the thing that matches with the needs for the earth.

4. The result and problem in this research

The conclusion is "the earth doesn't change whether humans are on the earth but the earth is confused if humans become extinct right now." That is why, I think "making the environment that the earth allows humans to become extinct" is our duty.

What would happen if humans vanished suddenly? First, electricity couldn't be created. Power plants might move but the humans who supply its fuel disappear, which means that serious lack of electricity will happen. Almost all energy would go to important places such as political buildings so electricity isn't supplied at private houses. Three days later when people disappear, New York would be submerged and one week later big cities where there are a lot of subway like Tokyo, Paris, and London would samely. In other words, the more artificial the thing is, the shorter the terms that it can stand corruption.

You may think there is no involvement between a lack of electricity or submerging of big cities and the extinction of animals or plants. However, one month later they would have had a heavy influence. It is said that the meltdown of nuclear power generation and the explosion of oil platforms would cause destruction of the ecosystem.

As a side note, after three hundred million years, most of the signs which show people were here would vanish, but nevertheless humans could give bad effects to animals or plants until plastic or rubber are decomposed. I think it is what we should do to collect and dispose of these components.

I explained what happened when people disappeared but does the earth really need people? In my opinion, “we can’t talk about it.”

In a word, there are animals which need us, otherwise there are them which dislike us to live. Animals such as dogs as pets and elephants and horses at zoos are difficult to go wild. They are given their food by humans so they lose the ability to get food themselves. Therefore people are needed for such animals. On the other hand, some kinds of animals reduced their living space because of people’s deforestation and global warming may think that disappearing people is good. According to the Human dignity and human worth, “Dignity is the answer to the more fundamental questions: ‘Why should I respect people’s autonomy?’ and ‘Why should I treat people with equity?’ Dignity is the ground of rights, not a synonym for rights.” This shows every person has dignity. However, I wonder why animals don’t have dignity. Therefore we may commit their dignity. It is not funny that animals dislike humans. When we consider whether these two situations conflicting with each other happen or not, I used “the law of conservation of happiness.”

The law of conservation of happiness means that both good things and bad things happen, that represents the level of good the person feels with value, and that the total of these values become 0. I extended this law’s interpretation, so I thought the total value is 0 in every situation, in other words the mass of happiness doesn’t change.

I used this law so the research’s result is that this world doesn’t change whether humans are on the earth.

The problem of this research is I don’t know if this research is right because few people research it or my lack of investigation.

5.Literature

https://link.springer.com/chapter/10.1007/978-1-4020-6281-0_2?noAccess=true

Human dignity and human worth(6/22)

✂destructive innovation: There are two types of disruptive innovation: low-end disruptive innovation and new market disruptive innovation. In both cases, it is possible to become an instant market leader by destroying the “common sense” of the industry. Disruptive innovation has a major impact not only on the company’s ability to develop its business, but also on the creation of new markets and the development of new customer bases.The antonym is sustaining innovation.

Saving the Hungry with Japanese Food

~Making original nutritional therapeutic meals~

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Abstract

Hunger is one of the biggest problems in the world. The number of people who are suffering from hunger is increasing. I thought from the viewpoint of people who are not getting enough nourishment. As a result, I suggest that I make original therapeutic food made of Japanese food. I add Japanese food for not only getting enough nourishment but also to connect Japan to the world. At first, therapeutic food is used in Africa mainly to rescue children who are dying of hunger, and it is called RUTF (Ready to use therapeutic food). I think about what I use as the main material. The goal of my research is to make and to deliver food to developing countries. If I can produce and make food, I will deliver to 3 developing countries first. And after that, I will increase the number of delivery countries to rescue many people who suffer from hunger.

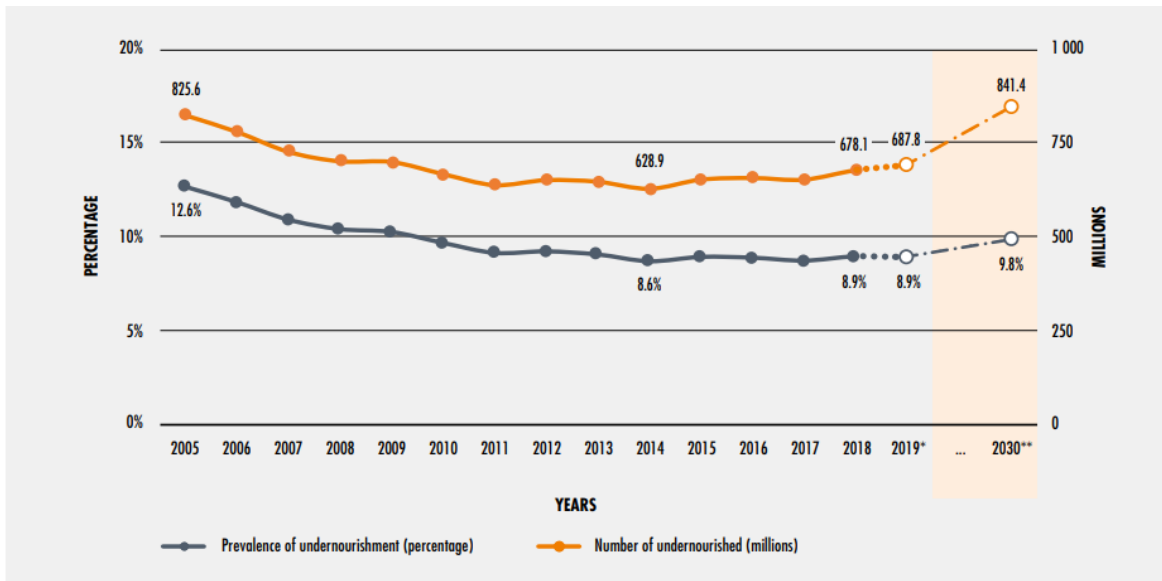
1 Introduction

Japanese food is traditional Japanese polite. It is healthy and great in nourishment so it is good for our health. So, using the merit, I decided on my theme to rescue children in developing countries with original therapeutic food.

The main way of my research is using the Internet and literature. Especially, I payed attention when I used information from the Internet. And I did fieldwork to get real information. Using it, I came to a conclusion.

2 Discussion and implications

The situation of hunger in developing countries. To review the definition of hunger, hunger is the inability to eat enough for a long period of time, resulting in undernourishment, making survival and social livelihood difficult. The world's hungry population is estimated to be up to 810 million people. In other words, one in nine people is hungry. The regions where hunger is particularly severe are Africa and Southeast Asia. Africa has the highest prevalence of hunger, with 256.1 million hungry people, and the number continues to grow. In East Africa, 30.8% of the population is undernourished. The largest number of hungry people are in Asia, where the number is estimated at more than 513.9 million. Many of these people also live in South Asia.

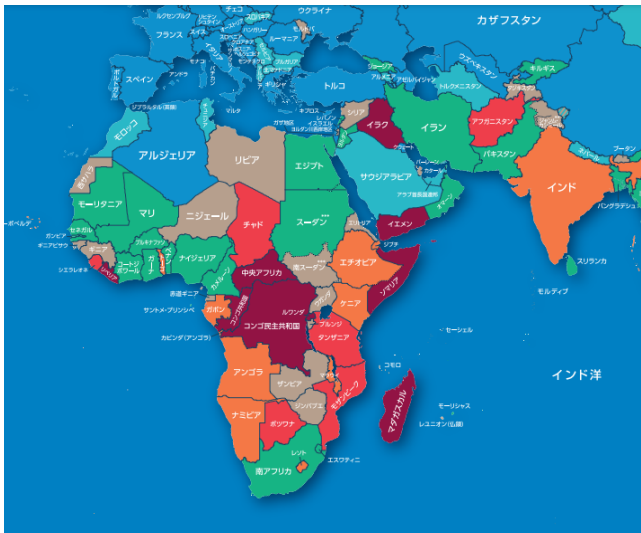


↑The change and rate of undernourished population

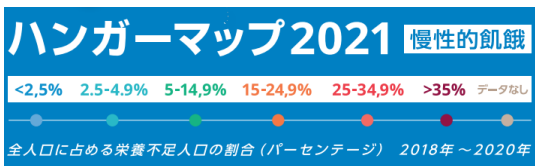
The graph above shows the trend and percentage of the undernourished population, which indicates that the overall number of undernourished people has been on the decline, but has been increasing again in recent years. Furthermore, it is expected that by 2030, far more people will be undernourished than today, with an increase of 200 million people per decade. This is not just an increase in the world's population; as can be seen in the black line graph, the undernourished population is increasing as a percentage of the total population.

In regions of Africa and Asia where hunger is severe, starvation causes all forms of malnutrition. Nine out of ten of the world's stunted children suffer from wasting disease (a disease that begins with behavioral abnormalities, severe weight loss, and in the final stages, drinking more water. It is believed to be spread through excrement.) is concentrated in the two regions mentioned above, with one in three children stunted in the regions of South Asia and Sub-Saharan Africa. Furthermore, with 2 billion moderately and severely food insecure people and 20.5 million low-birthweight children, world hunger has become a serious condition. Therefore, I conducted my research in Africa, a country with a high prevalence of hunger, as a source of nutritional therapeutic foods.

Africa is generally speaking, some countries are well-developed, while others have very serious hunger problems. In particular, hunger is very serious in sub-Saharan countries, and the hunger prevalence rate is over 35% in some countries. (Picture 1)



飢餓蔓延率	国名
35%以上	イエメン
	イラク
	コンゴ共和国
	コンゴ民主主義共和国
	ソマリア
	中央アフリカ
	ハイチ
	マダガスカル
	リベリア
	ルワンダ
	朝鮮民主主義人民共和国
25~34.9%	アフガニスタン
	シエラレオネ
	タンザニア
	チャド
	ボツワナ
	ベネズエラ
	モザンビーク



↑chart 2

↑picture 1

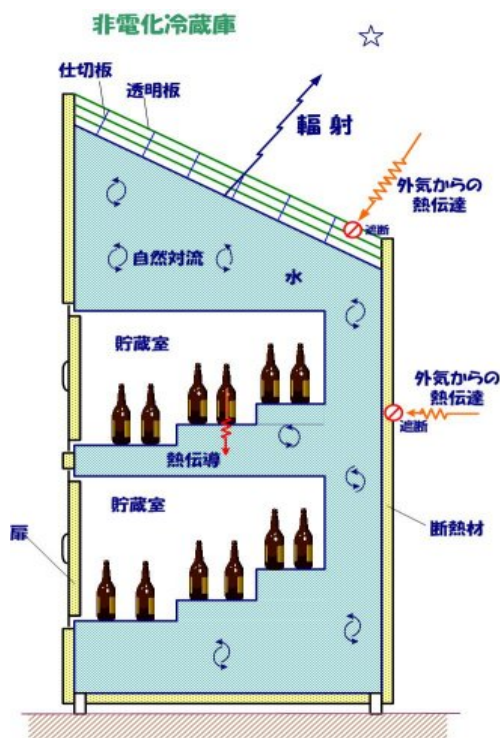
In addition, chart 2 is a table summarizing the hunger map in Picture 1. Figure 1 focuses mainly on the African continent, and the countries highlighted in yellow in Figure 2 are African countries. The table shows that among the countries with hunger prevalence rates of 35% or higher, 6 of the 11 countries are in Africa, accounting for 64% of the total. This indicates that it is the highest, not to mention the highest compared to other continents. Of the countries with 25-34.9%, 5 out of 7 are in Africa, accounting for 71% of the total. This is also the highest percentage. As expected, the prevalence of hunger is high in Africa.

Using the Hunger Map, I consider the countries in which to provide nutritional therapeutic food. Since nutritional therapeutic food is something that can help people in near-hunger situations, I wanted to provide it to African countries with hunger prevalence rates of 35% or higher. Therefore, I narrowed down the number of countries to offer the program to three. These three countries are Somalia, Madagascar, and Liberia. First, Somalia was selected because it has an African hunger prevalence rate of 35% or higher and is within a straight line distance from Japan. Madagascar was selected because it is one of the few African island countries with the closest linear distance from Japan, and Liberia was selected because it is small, with an area of 11,400 square kilometers, less than one-third the size of Japan. Thus, it was decided that the research direction would be to provide nutritional therapeutic food to Somalia, Madagascar, and Liberia.

In addition, I also looked into food assistance in the preparation and provision of nutritional treatment food. Food aid is mainly provided by organizations, such as UNICEF and JICA. The main method is fund-raising, and the money is used to distribute food in countries where nutritional deficiencies are occurring, or to actually cook out and distribute food in the field. Food aid is common to all organizations, but it was seen as less important than material aid. One possible reason for this is that in the process of collecting goods, there are various ways to collect relief supplies, such as shoes and clothes, in addition to money. In contrast, food aid is more limited than material aid because it is based on fundraising.

Next, I will explain what I have learned from my research on non-electrified refrigerators. As the name suggests, a non-electrified refrigerator is a refrigerator that cools the inside of a cabinet for

long-term food storage without using electricity. The mechanism of cooling the inside of a refrigerator is as follows.



According to the Non-electrified Workshop, the storage compartment of a refrigerator is made of metal with high thermal conductivity. In addition, as shown in the figure, the storage chamber is filled with plenty of water around it. The top surface of the water is touched by a radiating plate made of a material whose radiating surface easily produces radiation, and the radiating plate is covered with several transparent plates, so that heat from the outside air does not penetrate. In addition, heat from the outside air is blocked because the water is surrounded by insulation, and heat from the stored material is transferred to the surrounding water through the metal of the storage chamber. The heat transferred to the water moves to the top by natural convection and is transferred to the heat sink. The heat on the heat sink is radiated from the outside in proportion to the fourth power of the absolute temperature, and the heat from the stored material is released to the outside. At this time, the water in the storage cools unilaterally because it is designed to block any heat from the outside. If there is a sunny day at least once every three days, the

temperature inside the storage facility can be maintained at around 7 to 8°C even during the daytime in mid-summer.

Radiative cooling, which can be compared to the ground, means that the ground is always releasing heat, but during the daytime it is warmed by the sun's heat. At night, however, the ground continues to emit heat all the time, and this heat escapes, cooling the ground.

The advantage of using a non-electrified refrigerator is that it does not require clean water. The water used in a non-electrified refrigerator does not have to be clean. This is especially true in developing countries, where water problems also occur. At first I thought that vegetable production in developing countries would be a good solution to poverty. However, clean water is difficult to obtain in developing countries, and I thought it was impractical. However, non-electrified refrigerators are expected to be fully utilized in developing countries in this respect because they do not require clean water. Next, let's look at the point about not using electricity. As the name suggests, non-electrified refrigerators do not use electricity. The reason for this is that they cool the inside of the refrigerator using radiation cooling, as mentioned earlier. Therefore, they are easy to use in developing countries because there is no need to worry about the use of electricity, and they can also be used in the event of a disaster or sudden power outage. The third advantage is that they are smaller than conventional refrigerators. The third advantage is that they are smaller than conventional refrigerators, which requires more time and money to install, but because they are smaller, they take up less space and can be used by a larger number of people.

Regarding the connection to poverty, the ability to preserve fresh vegetables can first reduce food loss. And for the farmers, it will also reduce the amount of rotting vegetables and fruits, since they can store the harvested vegetables there. Thus, this will support farmers and improve poverty.

However, there are not a few disadvantages. For example, it costs a lot of money to make them. It is expensive because it requires special materials. And it requires a lot of water. Clean water is not necessary, but a lot of water is needed to fully fill the chamber. In desert areas, for example, the specifications can be more demanding. And then there is the fact that it depends on the weather. Radiative cooling is more effective the more hours of sunlight there are. Therefore, high effectiveness cannot be expected on cloudy days or during the rainy season. We will continue to study ways to improve these disadvantages.

In other words, the question at this point is how to raise money. The method we are considering at the moment is crowdfunding, but it requires a quid pro quo or a gift in return. Therefore, in order to raise a lot of money, we need to come up with a return gift that will satisfy the investors. Also, the actual structure of the non-electric refrigerators has not yet been decided, and we would like to consider this in the future.

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