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Court as a Policy Facilitator: Comparing Republic of KOREA and US in Dealing with Climate Change CRISIS

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Abstract

The purpose of this comparative study is to examine how courts in US and Korea may take on the role of a policy facilitator that encourages policy entrepreneurs to open the policy window for addressing climate change.

As the result of analyzing MA v. EPA decided in 2007, a typical example of the judicial activism in US, it was found that the US Court widened the scope of standing to sue and ordered passive administrators and legislators to open the policy window. The US state governments and environmental advocate groups used litigation as a strategic tool to nudge the federal government to take actions in the issue area of climate change.

However, climate change policy in Korea was mostly initiated and led by the president and its administration under global governance with little judicial roles. In 2006, the president promulgated the national vision on a low carbon green growth. By launching the Framework Act on Low Carbon, Green Growth in 2010, the government integrated climate change and global warming policy, new renewable energy and sustainable development policy, and others, which were used to be carried out separately under the individual laws of various Ministries.

The less active judicial roles are often found in the field of high specialty such as clean air affairs, the closest area to climate change. The judiciary has been deferring to administrative actions by applying the strict criteria of standing to sue and thus by limiting any chance of reviewing them by itself. The Courts, regardless of types, left an ample space for administrative discretion, and it has never been found that petition's argument is accepted against administrators' will, whether anti-environmental or not. In particular, the Constitutional Court tends to lean toward judicial deference more than does the Supreme Court. It has rejected all cases related to clear air at the preliminary step of standing to petition even before entering into judgement on the merits.

Generally speaking, it is highly difficult for civic groups and others to file a lawsuit due to their strict procedural requirements in Korea. The judiciary tends to apply the very strict criteria of standing to whether a plaintiff is qualified or not, and it seriously limits any judicial chance of reviewing administrative actions by itself. It is imperative that related lawsuits be allowed more widely in terms of standing to sue. This will promote more active civic participation in the decision-making process of climate change policy as in US cases.

[Keywords] *Climate Change Crisis, Climate Change Policy, Judicial Role, Judicial Review, Carbon Emission*

1. Introduction

Whereas, among many social problems, some may be solved or mitigated by the voluntary efforts of community members, many others are abandoned without governmental intervention and drive many people in trouble. However, even if there are many social problems that can be solved or mitigated only

by the governmental intervention, not all of them become a target to be solved by intervention. Only some of them become a focus of governmental endeavor due to the bias and interest of political elites who dominate policy-making systems in government as well as the limit of government in its ability.

Government selects some social problems as the policy agenda, which refers to the problems adopted officially by government with its intent to solve them, and the action of selection goes through the policy agenda-setting phase, the first phase in the course of the policy process. To solve and mitigate social problems, government needs to clarify its intention not only to recognize them as problems suitable for its intervention but to review them officially and seriously for solution. To find what will affect the process has great meaning in an academic aspect as well as a practical one.

Agenda-setting is the first phase where political conflict is disclosed around the solution of some social problem, and it offers the critical clues of how social costs and benefits will be allocated on the further phases. Hence, research is needed to find what various factors were in operation until socially salient problems go up onto the platform of official issues to be dealt by government. It is known that there are various participants in agenda-setting, such as politicians, bureaucrats, mass media, political parties, and so on.

How can a court decision be a key driving force for agenda-setting? This study attempts to focus on the role of courts as a facilitator of policy process, who leads a policy agenda out of a stalemate into policy formulation. This study recognizes climate change as a good example of an issue, and, from a comparative perspective, it attempts to find what different features South Korea and the US have shown in the role of courts and administration in the policy process. In particular, it starts with reviewing the most critical case on climate change in US, *Massachusetts v. EPA*, which ordered administrators and legislators to open “policy window” in climate change.

2. US Case of Climate Change Policy

2.1. By whom and how was it initiated?

The US cases have valuable implications in that the trials of climate change played a key role in building the regulatory policy of greenhouse gas emissions and the measure of climate change. The US state governments and

environmental advocate groups have used litigation as a strategic tool to nudge the federal government to take actions in the issue area of climate change.

A monumental case decided in 2007, *Massachusetts v. EPA*, built a legal basis to regulate greenhouse gases as a kind of air pollutant under the Clean Air Act and to provide EPA with the authority to regulate them. Four years after the decision, the Court reaffirmed that the Act is the legal basis of climate regulations.

The current state is the outcome of fierce discussions and deliberations on the basis of checks and balances among the executive, legislative, and judicial branches as well as through trials. State governments, civic groups, and the judicial branch urged the EPA to carry out the regulation of greenhouse gases through their active participation under Bush Administration with a lukewarm attitude[1][2].

While the EPA proposed the various regulations of greenhouse gases under the administration, US Congress and the president attempted to put serious limits on the EPA’s regulatory authority by allocating no budget [3].

Perhaps surprisingly, the decision also adds fuel to the legislative fire in Congress. Since the Democratic takeover in 2006, numerous climate change bills have been proposed, building on earlier proposals in the 109th Congress that went nowhere. Yet *MA v. EPA* has not quelled this legislative activity by sending the matter back to EPA, as our expertise-forcing perspective might predict. Instead, the decision seems only to have added to a sense of urgency that a federal law to cut emissions is necessary because the problem is so serious, and because GHG regulation affects virtually every aspect of the economy. In this sense, one might argue, *MA v. EPA* has a democracy-forcing aspect because it helped, by airing out the issues, to expose to public view the limitations of the Clean Air Act[4].

The industry also attempted to placate the regulatory policy of the EPA through lobbying and trial procedure. Hence, neither basic nor comprehensive law was enacted in order to

respond properly to climate change problems[5][6]. In the absence of legislative activities, state governments and civic groups showed strong intentions to gain their point through various trials. They proposed diverse legal principles to fulfill the requirements of standing to sue, the most serious obstacle, in environmental suits[6].

This checks and balances among various policy members might cause the outcome of greenhouse gas policy to be less progressive, but the process promoted the discussion and research of climate change science and ultimately made it the government possible to design reasonable greenhouse gas policy enough to be widely accepted by the society [7].

2.2. Main role of the court as a policy facilitator

In *Massachusetts v. EPA*, the US Supreme Court upheld Massachusetts' standing to challenge EPA's refusal to regulate greenhouse gas emissions. This was quite monumental because the Court had interpreted that standing to sue shall be valid only when the illegal dispositions of administrative agencies caused individual and concrete damages, and that the simple possibility of damages, or risk, was not enough to fulfill the standing requirement[6][8].

However, the new decision turned the interpretation over and upheld "precautionary-based standing" --- recognizing those simply exposed to the risk of climate change to be the qualified plaintiff. The Court decided that the science of global warming was sufficient to establish standing to sue because its harm would be catastrophic and irreversible; furthermore, its outbreak is subject to great uncertainty[9].

3. Korean Case of Climate Change Policy

3.1. By whom and how was it initiated?

Unlike in the US, the regulatory policy of climate change in Korea has so far been formed by the leadership of the executive branch in the central government. "The

Framework Act on Low Carbon, Green Growth," a comprehensive law related to greenhouse gas regulation, was passed in 2010, but it was caused mainly by presidential initiatives and administrative participation in the active proposal of the bill under the global governance rather than by serious discussion and deliberation in the National Assembly or civil society as well as the judicial process – starkly in opposition to the US case.

The umbrella act was completed by integrating dispersed provisions over the fields of energy and sustainability. Various laws, especially in the fields of energy and sustainability, had been in unsystematic operation before the basic law. In terms of energy, there had traditionally been the Energy Use Realization Act(1980), the Alternative Energy Development Promotion Act(1988), and the Integrated Energy Supply Act(1992). Energy consumption contributed to most carbon emissions, but the past laws focused on its efficient use without the relation with building a low carbon society.

The Framework Act on Energy, passed in 2006, would reflect "environment-friendly use of energy" in legal basic ideas and people's responsibility, but it did not embody detailed and concrete measures to realize a low carbon society. In 2005, the Act on the Promotion of the Development, Use and Diffusion of New and Renewable Energy was passed to connect energy with a low carbon green growth. The Act, as the complete revision of the Alternative Energy Development Promotion Act, contained support for the commercialization of new and alternative energy technology and the registration program of new and alternative energy facility business as main contents, but it was limited in its focus on the management and support authority of new and alternative energy with some distance from the realization of a low carbon society and the practice of green growth ideas.

In terms of sustainability, the Act on the Promotion of the Conversion into Environment-Friendly Industrial Structure of 1996 had a focus on the proactive forwarding of sustainable development, and its main purpose was to introduce financial measures

such as policy for the conversion to environment-friendly industrial structure and support for facility costs and technology development. While it intended to practice the roles of the industry adopted by UN Conference on Environment and Development at Rio in 1992, it contained only the very passive measures of responding to its Climate Change Convention. It prescribed measures to reduce greenhouse gas emission, but the Minister in charge just “may recommend” the measures.

National measures for the realization of the a low carbon society and green growth are reflected partly in individual laws pushed ahead by central administrative agencies as shown in the case of the Ministry of Knowledge Economy in charge of energy issues. However, goods and services to improve the efficiency of energy and resources as well as environment cover all over the economic activities such as economy, finance, construction, transportation, agriculture and fishery, tourism, and so on.

Consequently, in 2008, as the president promulgates the national vision on a low carbon green growth, the various efforts to establish a legislative ground continued to be made. Administrators and legislators proposed a variety of bills such as the Bill of Climate Change Measures, the Bill of Climate Change Response and Greenhouse Gas Reduction, among others. Finally, the Framework Act on Low Carbon, Green Growth was passed through the coordination and integration of those bills[10].

By this law, the government has the authority to push ahead with integrating climate change and global warming policy, new renewable energy and sustainable development policy, and others, which were used to be carried out separately under the individual laws of various Ministries. The law prescribed an implementation system including the Green Growth Committee that shall set up and review the strategies of the green growth state, as well as public policies, to carry forward efficiently and systematically low carbon green growth – for instance, the creation of green technology and industry, the settle-

ment of green building and life, and so on under the harmony of economy and environment.

3.2. Limited roles of the court as a policy facilitator

Under the strong tradition of judicial deference, the Korean courts have attempted to disguise two unshakable fundamental values as seemingly technical and value-free logic toward judicial deference: the administrative state is truly essential under the Korean context, on one hand, and thus the Courts should refrain themselves from being engaged in separation of powers as another policy maker, on the other hand.

Those court decisions used to be the reflection of a historical imperative for the effective administrative state at the cost of democracy and human rights mainly due to a relatively lagged start in industrialization and economic development as well as competition with North Korea. Under Confucian tradition, the Courts used to be also reluctant to challenge the interests of the president directly as they were viewed as a kind of monarch[11].

Under those circumstances, provisions have frequently stipulated the substantial delegation of legislative authority to the administration. Comprehensive legislative delegation to administration is serious to the point of being brought forth as the target of a constitutional petition.

The particularity of the administrative state clearly comes to the front in judicial decisions on the field of high specialty such as clean air affairs. The Courts, regardless of types, left an ample space for administrative discretion, and it has never been found that petition’s argument is accepted against administrators’ will. It does not matter with ideological orientations; whether in pro-environmental petitions or in anti-environmental ones, administrative decisions passed off without serious impediment.

In particular, the Constitutional Court leans toward judicial deference more than does the Supreme Court. The Constitutional Court rejected all of cases at the preliminary

step of standing to petition even before entering into judgement on the merits. Meanwhile, cases appear to fulfill requirements for standing to sue in the hand of the Supreme Court though dismissed in the next step, judgement on the merits.

Generally speaking, it is highly difficult for civic groups and others to file a lawsuit due to their strict procedural requirements. The judiciary tends to apply the very strict criteria of standing to whether a plaintiff is qualified or not, and it seriously limits any judicial chance of reviewing administrative actions by itself. It is imperative that related lawsuits be allowed more widely in terms of standing to sue. This will promote more active civic participation in the decision-making process of climate change policy as in US cases.

In conclusion, the Korean Court had no chance to get involved in opening the policy window of climate change. Then, it is necessary to review whether the Court will be able to take the progressive role of any policy facilitator in the future.

4. Comparison between US and Korea

As shown in <Table 1>, there are clear differences between Korea and the US in factors

affecting Climate Change Policy. The policy process of climate change in Korea was in progress mainly under global governance and presidential initiatives, which intended to integrate energy- and sustainability-related laws and programs scattered over different Ministries. The top-down system was little affected by input from the bottom, such as civic groups and non-central governments. Under the bottom-up system of US, main policy entrepreneurs were civic groups and state governments, not the president and federal agencies

Furthermore, policy participants in Korea showed less intention to resort to the judicial process than did their counterparts in US partially because the traditional trend of judicial deference. Many trials, especially related to constitutional issues, failed to overcome the barrier of standing requirements. In US, policy entrepreneurs consistently requested for more judicial roles in opening the policy window in anticipation of the revival of judicial activism against two other branches. Finally in *Massachusetts v. EPA*, the Supreme Court widened the scope of standing to sue and, according to claims of the plaintiff, ordered administrators to do something for climate change policy after receiving needed budget.

Table 1. Comparison of Korea with US in factors affecting climate change policy.

		Korea	US
Participants	Policy entrepreneurs	- Global governance - President - Central government	- Civic groups - State governments
	Less active (or inactive) and less influential	- Civic groups - Local governments	- President - Federal agencies(especially, EPA)
Nature of policy initiatives		Top-down(affected by global governance)	Bottom-up (within the national system)
Judicial roles		- Little requested yet - Judicial deference to administration	- Strongly requested by policy entrepreneurs - Judicial activism - Decided the illegality of administrative omission - Decisive in opening policy window

5. Conclusion

A set of clean air cases is a prime example of why the study of court decisions can be fruitful for the field of public policy in Korea and US. The area definitely requires such a high level of expertise that neither legislators nor judges can dare to acquire; so, it typically consolidates the foundation for the administrative state, usually causing judicial deference. This may be further happening in the climate change policy in Korea.

However, it is not the case with US, where even the Court has recognized the nature of climate change as a wicked and complex problem that may change “existing systems of value, ways of knowing, and institutions of governance” [12][13]. Its decision reflected that climate change should not be simply treated like other clean air issues. In *Massachusetts v. EPA*, the US Court played as a policy facilitator in the policy process by widening the scope of standing to sue, on one hand, and by ordering administrators and legislators to open the policy window, on the other hand.

Likewise, the first thing to be done by the Korean Court will be to widen standing to sue, so that the Court can have more chances of encouraging policy entrepreneurs to open the policy window or to push ahead with the course of the policy process. So far, Korean judicial review has impeded the further progress of the policy process frequently by deferring to administrative decisions and actions, as shown in climate change case.

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The Role of the Festival to Overcome the Regional Identity CRISIS in Republic of KOREA: Centering on Andong International Mask Dance Festival

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Abstract

This study is focused on festivals that can secure regional identity crisis. Local festivals, in particular, include local identity, which enhances self esteem, friendship, and solidarity. Also, recognizing that local identity is an important heritage that includes the social, cultural, historical, and local aspects of the area, local festivals that do not include local identities will not be able to perform the important functions of the festival. Therefore, we tried to examine the relationship between Andong International Talmanche Festival, which is the representative festival of the region, and local identity.

In order to grasp this relationship, the concept of regional identity was identified, and the components of local identity were analyzed, and the relationship between these components and the Andong Dance Festival was analyzed. As a result, Andong residents perceived Andong International Talmanche Festival as a local identity (spatiality, sociality, temporality) of Andong, and the Andong Talmanche International Festival festival was found to have a certain relationship with spatiality, sociality, and time which constitute local identity. However, in the festival evaluation survey, there are evaluations of domestic visitors and foreign visitors. However, since the opinions of local residents participating in the festival are not reflected, the festival emphasizes only the economic aspect of revitalizing the local economy. It is not enough to reflect. It is necessary to add Andong International Mask Dance Festival to the residents of Andong area(participants and non-females), which are important members of the festival, so that they can better reflect local identity in the next festival.

This study seems to have some deficiency in securing generality by analyzing festival and local identity by using single festival, secondary data, and documentary data. However, these studies suggest that a new approach to local festivals is needed. In other words, regional festivals function in various aspects such as economic aspect and cultural aspect, but the most essential function is to secure local identity. A local identity is a concept that includes a macroscopic and implicit meaning that includes the local tradition, culture and solidarity over a long period of time. Therefore, the identity of the local community, which has recently been weakened, is a necessary concept for the developmental aspect of local autonomy. This study is meaningful in terms of considering the ways to overcome the regional identity crisis.

[Keywords] District Festival, Crisis, Andong International Mask Festival, Spatiality, Temporality, Sociality

1. Introduction

Since 1995, the revival of the local autonomy system has made a lot of efforts to publicize the local identity outside the local autonomous entities. This is because if we do not establish a differentiated identity in competition with many local governments, we

will not only attract people's attention, but also the image of the region will not be properly evaluated. It is the local festival that has been most interested in discussing the local identity and the economic value of culture. The whole of the local culture that contains the contents of the life of the local residents

is the local festival and it functions as the content which becomes the core of the cultural product.

Especially, local festivals are recognized as an important policy of cultural industry due to the effects of cultural products such as revitalization of local economy, development of local specialized industries, employment creation effect, and improvement of local image. In fact, local governments, both domestically and internationally, hold regional festivals competitively, and as a result, there are 555 local festivals scheduled for 2014[1].

However, most of these local festivals are adopted as a key means of regional revitalization, and politicians tend to pursue local revitalization through festivals in Korean society while advocating business advocacy[2]. This trend is also seen in previous research on festivals, and it is being studied mainly on the economic aspects of the community, such as the analysis of visible effects of the festival itself[3].

Local festivals, in fact, communicate with local residents, class, class, and residents through playfulness and ritual, and the role of cultural aspect to maintain and integrate community is weakening. This seems to be overlooking the essential essence of the foundation of local festivals. If the festival is regarded as the act of a cultural group as a "reflection of life and reality, but at the same time a culture style with human desires and origins"[4], festivals express cultural identity of social groups, But the concept also means the orientation that festivals should pursue. At the beginning of the Andong International Mask Dance Festival, this concept was included and included the purpose of strengthening local identity and local revitalization. This means that access to festivals requires an approach from the economic aspect to the cultural and sociological aspect. For festivals to develop further, it is necessary to cultivate local cultural capital and symbolism and to differentiate from other regions.

The identity of the region should be reflected to examine the essential aspects of the festival. Therefore, in order to develop

the regional festival by grasping the relationship between the local identity and the festival, in this study, the relationship between local identity and the festival, local identity And the relationship between the two.

2. Theoretical Background

2.1. Concept and effect of festival

The preceding research conducted in China and Festivals have been performed as sacrificial ceremonies and religious ceremonies for human beings to pray for abundance and goodwill, and have become the driving forces that have brought together community society more and more. Our ancestors, as a nation that has lived enjoying the dance from the past, has wisely created a chance to check for the source of existence and recharge for the will of a new life through the festival periodically in everyday life[1].

If we look at the etymological meaning of the festival, it is the day when the holidays and the festivals overlap, and the celebration festival takes place. If it is a festival that combines the festival day and the first, it is an auspicious thing to imply a complex meaning. In other words, it is the feast to celebrate when there is birth, marriage, abundance, success, etc., and the distinction between the sacrifices and the sacrifices that can be originated from the form of primitive life. This is the only way to protect people from suffering from unreasonable awe, disasters, and diseases[5].

If we look at the etymologies of 'fest', 'festus', 'ferier' and Italian 'canival' which are the root words of 'festival' which is a common word for festivals in English, The festival has a concept that includes religion and consciousness[6].

Falassi(1987) summarizes festivals as 'times of divine or secular rituals performed according to special practices'. The festival is closely related to festivals and religious communities when it is defined as a public consciousness with a simple subject and Getz(1996) defines the festival as a public

consciousness. Arts, sports, and other special purposes[7].

In addition, the Japanese scholar Nobuyoshi Kanai(2001) also shows that the festival in terms of cultural anthropology is the 'holy sex', which creates gendered time and space with God), The "group involvement" concept of "periodicity(weekly)", "identification of self-identity in the group", etc. Is defined as a festival. The Ministry of Culture and Tourism(2006) has been organizing the festival as a 'local festival, local community, local government, and local government' in order to succeed and develop local traditions and cultures and to enhance the identity of local residents and the understanding of the local community[8]. It is a festival in which the community is prepared as a subject and it is reflected in the overall life and traditional cultural elements of local residents. The effects of local festivals in the region are generally promoted by the local economy, the harmony of the local residents, the improvement of the quality of life of local residents, and the promotion of local publicity and images[9]. In addition, the festival is a space where the politics of pleasure and identity are simultaneously realized through a spectacular event. When participating in the festival, the festival goes through a process of reaffirming its identity based on the administrative unit to some extent without knowing it. In other words, regional festivals have a positive effect on the development of local communities by promoting the pride of local residents and contributing to increasing regional consensus and identity[10].

2.2. Concept and effect of festival

The concept of identity refers to a characteristic that emerges from the 'self theory' of psychology and distinguishes it from the others of an individual or social group. Identity has a close relationship with concepts such as 'placeness', 'image', 'symbolism' and 'sense of place'[11]. This is the concept used to collectively identify dimensions.

In this way, identity is a relational and historical concept created in a framework of diverse social relations. In this social interac-

tion, identity is formed as the degree of mutual relation between the region, country, group, place, place and other places increases.

Paasi(2004) divides local identity into regional identity and regional consciousness. Regional identity is a concept according to how to classify regions according to natural characteristics, culture, and human characteristics. And to depict the nature, landscape, and history of the area, which were viewed as authoritative acts to symbolize or distinguish space and people[12]. According to Lee Seokhwan(2001), regional identity is the identity of the region that is differentiated from other regions, that is, the identity of the region in the local viewpoint, and the individuality or differentiation of the region in the viewpoint of the outward viewpoint. As such, regional identity is a characteristic that distinguishes elements such as history, nature, politics, economy, culture, and landscape of a specific area from those of other regions.

This concept is summarized as follows. Local identity is based on the sense of belonging and homogeneity of one region. It is based on locality, time, pride, space, and sociality that distinguish it from other regions. Landscape, image, and so on. Therefore, it can be said that local identity plays an important role in enhancing local self - esteem and self - esteem of local people and making positive development of local area. Therefore, in this study, the components of local identity were defined as temporal, social, and spatial, and the relationship between Andong International Dance Festival and local identity was examined.

3. Relation between Andong International Mask Dance Festival and Local Identity

3.1. Overview of Andong city

According to the overview of Andong City, the area is 1,521 square kilometers and the population is 168,140. As of 2014, there are 1 eup and 13 houses and 10 houses, and the number of households is 68,766. Geographically, Andong meets Nutrition, Cheongsong and Mana to the east, Yecheon to the west,

Yeongseong to the south, Yeongju to the north, and Bonghwa. Located in the northern inland of Gyeongsangbuk-do, Andong City is located in the central part of Taebaek where the Taebaek mountain ranges in the east and northeast, and Taebaek and Sobaek in the north. The Taebaek mountain range of the Taebaek mountain ranges across the east and west of Andong area makes relatively rugged mountains in the northeast and relatively flat topography in the south and south. The Andong area does not have large mountains, but small and medium sized mountains are densely distributed. And it can be said that the area is rare except for Poongsan Plain. The Nakdong River that flows through these mountains is merged with Songyachun as it moves out of Andong City, and various streams such as Donggye Stream, Mihe Stream, Reverse Stream Stream and Iseong Stream pass through Andong City and join the Nakdong River.

Andong has a Sobaek mountain in the north, which serves as a barrier to the invading South Koreans. On the east side, there was a steep mountain peaks between the Sea of Japan and the East Sea, which made it difficult for him to approach Andong. This geographical location left Andong as a safe place, with the exception of some of the most serious aggressions, and this isolated location was the basis for Andong to enjoy a stable location on the Korean Peninsula.

In addition, due to the characteristics of these minute supports, large residential areas could not be developed in Andong. Small villages were built around the confluence of rivers and small farmlands in the river, it was a hundred years down. These features are related to the human characteristics, and many Dongcheng villages in Andong and conservative and traditional characteristics descend to the center of the village[13].

Historically, Andong came to the Joseon Dynasty and became the center of scholarship as well as the administrative center of Kyungsang-do. Andong was geographically suitable to avoid the outside world, and because of the early acceptance of advanced farming methods, agricultural productivity was relatively high and economic stability

could be achieved. In addition, Andong was in a position to lead the northern area of Gyeongsang in the local administrative system and the military system and maintained the close relationship with the Goryeo royal family from the beginning of Goryeo Kingdom[14]. Andong formed the local identity as the base of the Confucianism which is the basis of the Confucian ideology of the Joseon Dynasty. As the Yeongnam School was established centering on Yiwang, the school territory of Yeongnam School made the Confucian culture of Andong area become the central Confucian culture of Joseon, Outstanding Confucian scholars and numerous talented people have come out. This historical background has flourished Confucian culture such as deep house(Hahoe Village), Seowon (Dosan Seowon etc.), scholars(Yiwang, Ryu Sung Ryong, etc.), and the damage caused by war and so on due to rugged mountains, Culture has been well preserved.

3.2. Relation between Andong talmance international festival festival and local identity

3.2.1. Residents' awareness of Andong's local identity

The purpose of this study is to examine the relationship between Andong's regional identity and the Andong Tal - dance International Festival. In the study on the change of local identity in Andong city, Kim Ri-na(2010) analyzed 'Andong residents' perception of local identity in Andong residency(39.5%) in response to'(33.3%), and 'education center city in the north of Kyungbuk Province'(14.9%). In particular, 37.3% of the respondents said that the reason why they chose "the capital of Korean spiritual culture" as the regional identity of Andong city was because the cultural relics of Confucian culture were preserved most abundantly. 23.5% answered that they chose Confucian tradition and etiquette because they chose 26.7% of the respondents and selected Confucian tradition and manners centered on many more close to other regions. And 11.5% answered that they chose to do so.

49.8% of the respondents said that the reason why they selected 'Korean Culture and Tourism City' as the local identity of Andong

city was because of the abundant cultural tourism resources such as Hahoe Village, Dosan Seowon and Andong Folk Village. 23.3% answered that they selected it because they are very high, and 8.2% answered that 18.2% of the respondents selected the Andong International Mask Dance Festival, which is the representative festival in Korea, every year, because they attract a large number of tourists through various cultural and sightseeing tours[15]. In other words, the local identity of Andong recognized by the residents of Andong is recognized as the cultural tourism resource city, which is the region where Confucian culture is best preserved. Andong International Mask Dance Festival is also recognized as a local identity. Therefore, the festival of Andong International Mask Dance Festival has a certain relationship with local identity.

In order to understand the regional identity of Andong in the study of cultural and political characteristics of local festivals of and whether they were proud of the area [16]. The analysis is as follows. The results of the self-esteem analysis of the regional festival were as follows. The contribution of the festival to the residents' union was 3.06, and the local residents through the festival it is somewhat inadequate to derive the intimacy or unity of In the case of Andong, the festival was expanded not only by local residents but also by the scale of festivals, which resulted in the wider interest in the local people, rather than consideration and concern for local residents. The local qualification for the festival is 3.65, which shows a relatively high recognition. In the case of self-esteem by festivals, it is 3.50, indicating that identity perception is high. In the case of Andong International Mask Dance Festival, it emphasizes regional spirit and cultural success through festivals, emphasizes locality due to the nature of the festival, and emphasizes pride and cultural enjoyment based on the locality. The results of this study also suggest that the Andong Talmund International Talmance Festival has a certain relationship with the local identity of the festival.

3.2.2. The relationship between Andong international mask dance festival

and local identity

3.2.2.1. Space(space, image, symbol)

The venue of Andong International Mask Dance Festival is mainly held in Talmung Park, Hahoe Village, etc. If you look at the festival program in 2014, you can see Korean Mask Dance, Foreign Mask Dance, Talon Dance, Daedong Majang, Madang Pole, Andong Folk Festival, Hahoe Village Traditional Courtyard, Small Theater, In Andong City Hall website, Andong area travel agency consists of 3 programs: Dosan Seowon area, Hahoe village area, and hometown experience. However, nine out of 13 programs in other regions include Hahoe village. The Andong International Mask Dance Festival has a certain relationship with the local identity[17].

3.2.2.2. Sociality(social interaction)

In order to understand the sociality that constitutes the local identity of Andong International Talmance Dance Festival, we examined the social interactions among the participants. The organizer of Andong International Mask Dance Festival is the Foundation for Tourism Organizing Committee(AFTF). Among these, local governments are playing a role as supporters at the government level, such as financial support and manpower support during festivals. Festivists participate in the whole process from festival-related specialists(universities, cultural institutes, cultural property holders, etc.) to the organizing committee, planning, operation and evaluation of festivals. Andong City and Andong Tourism Foundation organized the operation of 10 departments of 3 departments with the vice mayor as the supporting director for smooth operation of the festival and supported the festival. In addition, civic groups(such as Lions clubs) participate in planning and evaluation, especially as a supporter of domestic and international performers participating in festivals. In addition, the local merchants' group plays a role as a supporter of publicity activities as well as providing various facilities and services to festival participants. Volunteers participated in the evaluation process in addition to helping the festival progress. Some residents are

participating in festivals and activating festivals by participating in the festival(Andong Folk Festival: Daedong Peninsula Parade, Fighting Game, and Stepping on Butterfly). Finally, Andong International Mask Dance Festival was found to constitute local identity through active interaction among participants in sociality that constitutes local identity.

3.2.2.3. Time(historical)

Hahoe Hyeolseunggut Talon is an important intangible cultural asset No. 69. If the Hahoe-hyeonui fireworks show was the one of the two kinds of play, About 500 years ago, once in 10 years, when I was on the day of the first day of the New Year, or on a special occasion, I performed a ghost shrine to the shogun, which was the oldest in my country's mask dance. During the walk, a clown who wears a hat was able to point out the usual mistake he made toward the man, and he could disobey the man. This system was intended to open the door to the common people, because the society without the sound criticism and the check did all kinds of abuse. Hahoe Hyeolseunggut Talon is the oldest masked dance in Korea and it is operated as an important program in the Andong International Talent Dance Festival in terms of time(historical), so it can be said that it reflects the local identity in the local festival[18]. Therefore, Andong International Mask Dance Festival has a certain relationship with local identity.

4. Conclusion

The purpose of this study is to examine local festivals in terms of securing local identity, which is an essential aspect of festival, not from the economic perspective, Local festivals, in particular, include local identity, which enhances self esteem, friendship, and solidarity. Also, recognizing that local identity is an important heritage that includes the social, cultural, historical, and local aspects of the area, regional festivals that do not include local identities will not be able to perform the important functions of the festival. Therefore, we tried to examine the relationship between

Andong International Talmanche Festival, which is the representative festival of the region, and local identity. In order to grasp this relationship, the concept of regional identity was identified, and the components of local identity were analyzed, and the relationship between these components and the Andong Dance Festival was analyzed. As a result, Andong residents perceived Andong International Talmanche Festival as the local identity(spatiality, sociality, temporality) of Andong, and the Andong Talmanche International Festival festival was found to have a certain relationship with spatiality, sociality, and time that constitute local identity. However, in the festival evaluation survey, there are evaluations of domestic visitors and foreign visitors. However, since the opinions of local residents participating in the festival are not reflected, the festival emphasizes only the economic aspect of revitalizing the local economy. It is not enough to reflect. It is necessary to add Andong International Mask Dance Festival to the residents of Andong area(participants and non-females), which are important members of the festival, so that they can better reflect local identity in the next festival.

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On the Directions of Economic Education after Financial CRISIS: What to and How to Teach

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Abstract

Economics, which has failed to predict and resolve the 2008 financial crisis, has faced much criticism. Especially, skeptical voices on the core assumptions of economics: economic rationality (Homo economicus) and the autonomous mechanism and stability of the market, have been raised. Also, it has been criticized of focusing only on mathematical models and overlooking the complexity and uncertainty of reality.

Secondary school economic education aims to cultivate economic citizenship that can make rational decision based on economic knowledge in reality. Therefore, economics plays a very important role in economic education in terms of being its core content; economics having faced much criticism, economic education also has to set a new direction after the financial crisis.

Having recognized these problems, this study aims to discuss what economic education after the financial crisis should be and how it could be taught.

First is to introduce pluralism, which insists to depart from mainstream economics monoism and to deal with minor economic issues. Students will be able to develop critical thinking skills while learning a variety of competing economic theories and analyzing and interpreting the real economy based on them.

Second is to start a full-fledged discussion on bringing economic ethics into classroom. The necessity of economic ethics has long been discussed, but it is not being handled in the actual education field due to various problems. Because financial crisis is closely related to ethical issues such as human greed and injustice, it is necessary to fully attempt to discuss economic ethics at school.

Finally, such changes in the content area of economic education inevitably lead to changes in the teaching method. The existing lecture-based education is not adequate for class based on pluralistic theories and has difficulties on addressing economic ethics related to affective attitude properly.

Therefore, it is necessary to break from lecture-based education that focuses on transferring economic knowledge and to introduce various learning methods such as discussion, cooperative learning, and project-based learning.

In face of criticism of economics, secondary school economic education centered on economic knowledge also faced new challenges. In order not to suffer repeated economic crises, it is necessary to prepare for the future based on reflection on past failures.

The best way is to educate students. In a society where complexity and uncertainties are prevalent, to raise students into economic entities that can make rational decisions based on various information, classroom economic education should be improved.

I hope that more concerns and discussions on the contents and methods of economic education will be actively pursued.

[Keywords] Financial Crisis, Economic Education, Economic Ethics, Pluralism, Teaching Method

1. Introduction

The global financial crisis, which began in 2008 with the collapse of the US real estate market, has brought about a painful lesson. The collapse of the US financial market began with the Wall Street's greed, people's ignorance on economy, and misguided policies. World financial market, which was intertwined like a spider web as a result of globalization and financial liberalization, was greatly shocked and began to collapse; financial market wobbled also in Korea, where not much money has been invested in derivatives, which was in the core of the crisis. The collapse of financial market rapidly spread to the real market, and world's economic growth was greatly decreased.

In the context of financial crisis, which is often referred as the largest economic event since The Great Depression, economics has failed to exert great influence. The goal of economics is to predict the future by analyzing and explaining the real economy and finding the principles behind it. However, from the beginning to the end of the financial crisis, economics has failed to achieve its goal and has therefore faced much criticism. Economists who failed to predict the financial crisis and provide useful advices were portrayed as an arrogant and underspecialized group[1]. Criticism on the rational economic persons assumption of the mainstream economics and the completeness of the market have persisted, and economists themselves have begun to make reflections on the powerlessness of economics.

As economics has encountered such criticism, discussion on what to and how to teach in economic education, which is based on economics, has been active. There has already been much discussion on the meaning and characteristics of economic education. Many economic education experts are in consensus that secondary school economic education cannot be equalized with college-level economics education, which conveys principles and concepts of economics. However, secondary school economic education has even until recently been focused on transferring the content knowledge of economics. Yet, as economics showed its powerlessness in

front of global economic crisis, criticism on the efficacy of economic education that has centered on conveying the concepts and principles of economics has been continued. In this situation, it is of great importance to discuss what should be addressed in economic education and how it should be conveyed. Being aware of these problems, this study suggests some directions that economic education after financial crisis should follow.

2. Criticism on Economic Crisis and Economics

Criticism on the contents and methodology of economics has persisted. First of all, mainstream economics insists that the market and economy maintain a stable state due to the power of the market itself. Therefore, in most economic models, there is no systematic crisis situation in which problems in one area has lasting adverse effects on the economy as a whole. However, the problems raised from the US subprime mortgages in 2008 shook up not only the US financial market but the whole global financial system. Economic models that adhere to the power of returning to the market equilibrium failed to predict such phenomenon and to suggest countermeasures to cope with such problems[2].

While mainstream economics view the equilibrium price determined in the market as the result of rational choices of economic agents, in reality, prices are determined by the intervention of irrational factors in many cases. As evidenced by various experiments in behavioral economics, most of the people do not make every decision based on perfect rationality. Also, various and unpredictable factors that arise in real economy do not allow the economy to work as described in economics textbooks[3].

In economics, representative agent is assumed while explaining the distribution of scarce resources. These agents try to maximize utility in the financial domain and are regarded as being able to suggest correct alternatives to all possible future situations. Economists have seen it possible to produce appropriate alternatives with rigorous and complex mathematical formulas. Nevertheless,

there is a lack of empirical data compared to a large number of mathematical formulas, and therefore, there has been a problem that it has been mainly dependent on simulation. As Schneider pointed out, standards for economics was alienated from reality by approaching the problem through modeling and abstraction[4]. Also, while they tried to distinguish possible problems using rigorous and complex formulas, it is nearly impossible to apply all the factors existing in reality into equations. If all the possible factors could have been taken into consideration, it would have been very helpful in overcoming the 2008 financial crisis. In reality, however, even the amount of losses generated from a large number of derivatives was barely figured out.

3. Economic Education after Economic Crisis

The aim of economic education is to cultivate decision-making ability that can resolve the impending economic problems based on concepts, principles, and theories of economics and to raise democratic citizens who can make rational decisions. Teaching knowledge on economics in economic education is a very important job, and economics and economic education are closely interrelated. Therefore, as criticism and reflection on economics after the financial crisis has been heightened, discussions on how to deal with economics in economic education has been actively carried out[5]. Such aspect can be divided into the following three categories.

3.1. Reinforcing economics-centered economic education

Among various assumptions of economics, the one that is recently facing much criticism is that people are rational beings. People can make rational decisions in a given situation based on a variety of information. However, as easily observed in reality, people are not unlimitedly rational, and here lies the causes of economic problems. Therefore, conducting education to enhance people's rationality can be a good way of responding to economic problems. In this context, it can be argued that economics-based economic education

should be reinforced. Complex problems in reality can be resolved through education that strengthens economic rationality[6][7]. In this perspective, the 2008 financial crisis could be attributed to irrational decisions of economic entities that were not equipped with economic rationality. From this point of view, in the current era in which uncertainty is prevalent, it is necessary to know more deeply about economics to overcome economic crisis.

3.2. Reinforcing economic problem-based economics education

While criticizing economic education focused on teaching economics, some maintain positions that economic education based on economic problems should be strengthened. In terms of the goal of raising a rational economic persons, it has no difference from the assertion above. However, if economic education is biased on knowledge of economics, it is very likely to be away from the ultimate goal of economic education as a part of social studies education. Therefore, while maintaining the goal of economic education intact, in order to foster the abilities to solve economic problems encountered in everyday life and to do correct decision-making, civic education goals are added and various attempts in teaching methods are done. In conjunction with constructivist education and student experience-centered education, the emphasis is on developing students' ability to construct knowledge of economics and to make rational decision through experiences. From this point of view, less relevant to the students' lives or overly theoretical contents need to be removed from the classroom and new contents such as financial education can be added. Nowadays, economic education in schools emphasizes inquiry activity linked to students' everyday life, which is aimed at economic education centered on economic problems.

3.3. Critical approaches to economics

There is also a movement to recognize the fundamental problems of economics itself, which has been criticized since the financial crisis, and seek educational alternatives. The emergence of behavioral economics reveals

that it is quite difficult to become a rational person assumed in economics in reality. On the other hand, as the global economic crisis continues, we are faced with criticism that economics is failing to do its job[8]. If the assumptions of economics are broken and cannot help to solve real problems, the meaning of economics education with the goal of cultivating rational economic persons based on economics is bound to fade inevitably. Therefore, it has been argued that in the actual education field, the limitations of economics must be recognized and contents that were not covered in the existing economic education, such as public choice theory or behavioral economics which reflect reality should be dealt with. In addition, the idea that not only the content of mainstream economics should be covered but economic theories should be taught more broadly to become a pluralistic economic class has appeared, and discussions about alternative economic education are widely carried out[9][10].

4. Suggestions on the Directions of Economic Education

Based on the above discussions, my suggestions on the contents to be included in economic education after the financial crisis are the following:

4.1. Try pluralistic approaches

The current curricula and textbooks of secondary school economics education are based on the neoclassical school economics which was created by compromising the claims of the classical and Keynesian schools. In the situation in which mainstream economics is being criticized, it is problematic that the contents of the secondary economics textbooks consist only of the theories of the neoclassical school. As already reviewed, assumptions of neoclassical economics such as economic rationality, market completeness, and predictions through mathematical approach, failed to diagnose and solve the financial crisis because they did not reflect reality. Therefore, it is necessary to deal with various economic theories along with mainstream economics. For example, Cohn made

it possible to lead controversial lessons while simultaneously teaching mainstream economics and the contents of minor economics[9].

This pluralistic view sees economics as a multi-polarized discipline, and sees that critical thinking ability can be improved by looking at phenomena from the viewpoints of conflicting disciplines[10]. Improving critical thinking means raising decision-making power in the uncertainty-prevalent world. While economic education centered on delivering knowledge on mainstream economics aims to develop problem-solving ability that finds answers settled in economics, the goal of the pluralistic view is to find solutions by considering various theories in complex problematic situations. It makes possible to approach problem situations creatively, rather than looking for settled answers[11]. Such a pluralistic approach is consistent with the goal of economic education, which is to train economic citizens who can make rational judgments based on economic knowledge.

4.2. Intensification of debates on economic ethics

Like mathematics and physics, economics, which has many characteristics as a positive science, has tried to find laws in economic phenomena and to explain and predict reality based on them. In this process, economics has become a rational and objective academic discipline, and interest in ethical areas such as fairness, altruism, and justice has been reduced. Also, by assuming economic entities as having rational selfishness, it neglected the effect of many factors related to human behavior on individual behavior. This is because the efficiency of resource allocation can be attained by only demonstrating rational selfishness within the framework of socially determined laws and regulations. For this reason, ethical issues have been separated from economics and have been treated as an independent realm[12].

Not only the financial crisis, in which big banks' greed and the psychology of those who expected 'free lunch' played a major role, but many economic crises we have experienced are directly or indirectly related to the

absence of ethics[13] In the cases of Korea, there are still many problems due to the lack of discussions related to economic ethics in the process of unprecedented economic growth. Rather, following ethics in the process of generating and resolving economic problems has been perceived as a loss in a capitalist society. These problems are predicted by economics and ethics turning their back on each other.

Many economic education specialists regard economic ethics, values considered to be socially desirable, and social justice, etc. as factors of economic citizenship. However, economic ethics are rarely dealt with because they have not been specifically addressed in curricula or textbooks. Given the human desire and infinite selfishness were behind the financial crisis, economic ethics education can no longer be postponed in the field of education.

4.3. Diversification of teaching methods

Classical teaching methods to acquire, understand, and apply knowledge can be a good fit for solving economic questionnaires, but it is inadequate for students to apply the lessons learned in class to everyday life. Many studies have already criticized lecture-centered economics classes aimed at knowledge transfer. It is necessary to change the teaching methods in order to introduce pluralistic economics theories as discussed above, and to allow students to understand and critically analyze economic phenomena based on such competitive theories. The greatest advantage of pluralistic education is known as student participation[14]. On the other hand, the issues related to economic ethics are controversial and have the character of decision making based on social consensus. In this respect, a suitable way to teach economic ethics is known as discussion-oriented education[15]. Therefore, now that the meaning of the class that conveys the concepts and theories of economics has faded, the goal of economic classes should be achieved by using various teaching methods. For example, through discussion, cooperative learning, project learning, etc., students can develop

their ability to solve economic problems that arise in various and complex contexts.

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Analysis on the CRISIS and Countermeasures of CHINA's Pension Fund Investment Operation -A Case Study on the Investment Management of Pension Funds in KOREA-

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Abstract

In the process of the development, establishment and improvement of industrialization, the pension system has played an important role in maintaining social stability and promoting economic development, and it became the safety valve of social and economic operation.

Chinese introduced the pension system under direction of socialist ideology, the reform of the system is mainly carried out by government's executive order, and distribute to other places. However, with the establishment of China's market economy system, the pension system has also undergone a structural change, such as the implementation of multi-level pension system, government policy and private account system, and the rural pension insurance system.

South Korea made "National Welfare Pension Law" in 1973, and it was formally implemented in 1988. Prominent features of the pension system are as follows: the legal form of the implementation system, expand coverage on the basis of the number of workers, businesses and individuals share contribution rate of 4.5% of one's salary. In addition, South Korea has also focused on the financial stability of pension funds, since 1988, investment funds was used, with "profitability, stability, publicity, liquidity, operational independence" as the basic investment principles, pursuit transparent and effective pension fund investment. Also, the country developed annual "Investment Policy White Paper" which clearly defined objectives and long-term asset allocation strategy, investment benchmarks and prevention mechanisms, recruitment agencies and other specially commissioned content, to facilitate investment management and efficiency. From 2007 to 2015, investment income rate has maintained at a high level, reaching an average 5.64 percent.

Even though the People's Republic of China(hereinafter China) has improved its pension insurance system, the country's aging population, eroding ability to pay benefits, asymmetric regional financial burdens, and considerable transition costs present problems in managing pension funds, preserving and increasing their valuations, and improving investment mechanisms. In fund management, in order to improve the effectiveness of fund management, China needs to create investment management suited to China's Pension Insurance System, seek for diversified investors and investment targets, establish policies and targets for pension fund investments and management and better supervision of investments as South Korea such measures will have a positive impact on the future of reform and design.

This paper based on the basic content of pension fund management and the inherent requirements of the system design. It combines theoretical precedents and case analyses to apply the principles underlying pension fund management in Korea to China. It analyzes the national conditions in China and its pension operations, identifies problems, and proposes solutions.

[Keywords] *Pension Fund, Pension Fund Investment Crisis, Pension Fund Investment Management in Korea, Countermeasure Analysis, Pension System*

1. Introduction

In this study, pension insurance refers to a partially-funded retirement program in which balances that are not immediately paid as benefits are invested in legally approved vehicles. The People's Republic of China(hereinafter China) is transforming from pay-as-you-go to partially funded pension insurance[1]. Able management is essential for this undertaking as pension payments support social and economic development, as well as personal and social stability. Fund balances are expected to increase continuously as China improves its pension insurance system. A reliable and effective mechanism of managing investments preserves and increases pension fund valuations and guarantees the ability to pay benefits[2].

This study proceeds as follows: Section 2 explains China's pension system, identifies problems, and discusses investment operations. Section 3 analyzes pension fund management, investment policies, and operating conditions in the Republic of Korea(hereinafter Korea) and identifies the factors that make its program successful. Section 4 discusses the application of Korea's example to China.

2. Pension Fund Operations and Problems in China

Guaranteed security is the first principle of pension fund investment in China. Decrees in the State Council on the Establishment of a Unified Basic Old-age Insurance System for Enterprise Employees issued in 1997 subject basic pension insurance to controls that assure that funds benefit retirees[3]. All balances beyond those needed for two months of benefits must be invested in bonds and deposited in a special account. Investment in financial and operating businesses is forbidden.

As per the 2002 Notice on RMB Agreement Deposit of Individual Account Fund for Pension Insurance Handled by Commercial Banks issued by the People's Bank of China(BoC),

provincial social insurance agencies may contract commercial banks to hold deposits in individual pension insurance accounts. In November 2005, the Ministry of Finance(MoF) and the former Ministry of Labor and Social Security jointly issued the Notice on Relevant Issues of Expanding and Consolidating the Individual Account for Basic Pension Insurance for Enterprise Employees on a Pilot Basis[4]. It stipulates that monies in consolidated individual accounts should be subject to unified management by provincial governments and that the central financial subsidy should be entrusted by the provincial government to the National Council for Social Security Fund for investment and operation, with a specified rate of return. Apart from the central financial subsidy, individual accounts should be managed locally.

China has gradually improved the social security system covering urban and rural areas. Pension fund accumulation has increased rapidly. The basic employees' pension insurance system has been combined with the institutional units' pension insurance system. Bank deposits and purchases of national debt stipulated by existing policies have not preserved or increased fund valuations or assured payment of benefits. As economic development becomes China's "new normal," its aging population imposes greater pressure on the payment of pension fund benefits. To improve investment policies, expand investment channels, increase basic pension insurance fund income, preserve and increase fund valuations, and sustain the pension insurance system, the Ministry of Human Resources and Social Security, the MoF, and other departments in 2015 jointly drafted the Basic Pension Insurance Fund Investment Management Measures. Its purpose was "enhancing the social insurance fund investment management and supervision and promoting the market-oriented and diversified investment operation of the fund" as stipulated by the Third Plenary Session of the 18th Central Committee.

It is stipulated in the Measures that pension fund investments should observe the

principles of market orientation, diversification, and specialization. Fund valuations should be preserved and increased, and the security and liquidity of assets should be guaranteed. The urban employees' pension fund earned CNY 2,934.1 billion during 2015, up 15.9% from 2014, including an income of CNY 2,301.6 billion collected from the urban employees, up 12.6% over 2014. Subsidies for the pension insurance fund reached CNY 471.6 billion. The total expenditure for 2015 was CNY 2,581.3 billion, up 18.7% from 2014. By yearend, the urban employees' pension insurance fund was valued at CNY 3,534.5 billion, thereby meeting the 17.7-month payment requirement[5].

It is necessary to allocate pension fund portfolios in a manner that moderates investment risk and guarantees fund security; however, current policy faces four long-term problems:

2.1. Difficulty in preserving and increasing valuations

China strictly controls permissible pension investments. Throughout 2001–2015, the interest paid on demand deposits at the BoC generally lagged increases in consumer prices. As that gap widens, the security of urban employees' pension insurance funds deposited in banks is only nominally guaranteed[6].

2.2. Poor financial sustainability

Since China combined social pooling with individual accounts, no accumulation of pension fund has been made for real. All funds are used to fill up the individual accounts, while the individual accounts are still empty (with book amounts but no actual fund). The root cause is that how to cover the implicit pension debt left by the old system was not clearly stipulated upon the establishment of the new system. Therefore, local governments have had to appropriate monies from the individual account fund to pay current benefits. Draining individual accounts to pay pooled benefits cannot guarantee long-term payments as China's population grays.

2.3. Asymmetric provincial burdens

The urban employees' pension fund faces significant provincial differences in obligations, pension coverage, and balances of revenue and expenditure. The more economically developed the province, the less the support for the urban employees' pension insurance system and the greater the accumulated balances in the fund. The opposite is true in economically backward provinces. Without fiscal symmetry among provinces, central financing bears greater transfer payment burdens and provincial inequities persist. China's current system might exacerbate these provincial imbalances.

2.4. Shifting population

China's population is living longer, with a declining birth rate and a dwindling working-age population. According to the United Nations Population Division, 2015 was a turning point in China's demographics. In 2015, China's working-age population(ages 15–64) was 996 million. The number is expected to be 909 million in 2025, 829 million in 2045, and 734 million in 2055. The population above the age of 65 years will grow from 130 million in 2015 to 229 million in 2030 and 323 million in 2045. China's current pension system is unsustainable under these projections.

3. Pension Fund Operations in Korea

Korea instituted pension insurance in 1988. It was designed as an accumulation fund to pay old-age pension. The system can assure benefits to citizens despite Korea's increasing elderly population and problematic dependency ratio[7]. The government requires workers to pay into a long-term trust. Beneficiaries who satisfy actuarial conditions for payments and withdrawals can obtain liability reserve funds. Despite its relatively brief history, this system has grown rapidly and invests effectively.

In 1988, Korea's pension fund was KRW 528.2 billion. Since 1994, the Public Management Fund Committee has used its monies to construct social service facilities, including loans for kindergartens(1994), old-age welfare facilities(1995), and International Monetary Fund(IMF) support for the unemployed

(1998). To facilitate systematization, effectiveness, and professionalism, Korea's Ministry for Health and Welfare(MHW) established a pension fund headquarters and reformed operating procedures in 1999. It successively introduced domestic entrusted operations, venture investment cooperation, foreign stock entrusted operations, and other investment methods. These steps increased the return on investment(ROI)[8]. During 2015, the income from pension funds was KRW 580 trillion, including KRW 403 trillion from premiums and KRW 176 trillion from investments, representing 69.5% and 30.3%, respectively. At yearend, the total expenditure was KRW 126 trillion, including KRW 120 trillion in ben-

efit payments and KRW 6 trillion in management fees. The accumulated funds amounted to KRW 454 trillion[9].

Korea initiated market-oriented investment practices in 1988; however, the ROI of pension funds has declined since 1990, presumably reflecting declining global interest rates. ROI collapsed in 1997 when an exchange-rate crisis precipitated a stock market crash and improved with the market in 1998. Performance and valuations evaporated during the 2008 global financial crisis and the 2013 European debt crisis <Table 1>. Massive central bank easing prompted a reduction in funds' foreign investment, and ROI fell again. In 2015, it was 4.57%.

Table 1. Historical annual average ROI of Korea's pension funds[9].

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	Annual average(%)
ROI(%)	6.86	-0.19	10.41	10.39	2.31	7.00	4.19	5.25	4.57	5.64

Korea's pension funds achieved impressive ROI for three reasons.

1)Effective operations. Pension funds in Korea are managed by National Pension Service(NPS) and supervised by the National Pension Fund Operation Committee(NPFOC) organized by MHW. NPFOC oversees funds' policies, interest rate agreements, operating plans, and results. NPFOC adopted a triangular system of government, users(enterprises), and labor. MHW tasked NPS with administering pension insurance(including investments). Korea effectively supervises the independent administration and management of its social insurance system. MHW reviews revenues, expenditures, and operations to maintain each party's interests[10].

The profitability and transparency of Korea's pension funds are strengthened. The interests of applicants(beneficiaries) are maximized through legal supervision and monitoring by the media(TV, newspapers, spe-

cialty websites). Trusteeship increases managerial transparency and ROI, thus assuring financial sustainability.

2)Specialized investment management. Korea sticks to its adoption of a partly trust management model directly managed by the government, which consists of NPFOC, NPS and the investment manager. In short, NPFOC and NPS have a trust relationship, and NPS and the investment manager have a principal-agent relationship. NPFOC develops the system and sets policies. NPS acts as a special body that is responsible for pension services, management supervision, and fund valuation. It collects premiums, determines and issues pensions, manages applicants, assesses policy and fund operations, and studies financial trends[11].

Korea observes five investment principles: profitability, stability, visibility, liquidity, and independence. Investment managers are selected on the merits of their qualifications and suitability for a principal-agent relation-

ship. These practices facilitate investment diversification and decentralization, thereby reducing risks and increasing ROI.

3)Diversified investment. Diversification is a matter of methods and partially entrusted investment. Asset allocation is based on Markowitz and other modern portfolio theories. In 2015, assets consisted of 51.4% national bonds, 4% foreign bonds, 20.2% national stocks, 13.1% foreign stocks, and 11.5% alternative investments. Considering the narrowness of Korea's domestic market and the economic influence of pension funds, foreign investment is expected to expand. A specialized corporate fiduciary conducts investment operations. Active management can alter the ratio of mid-cap and large-cap stocks to small-cap stocks. It also generates liquidity and ROI exceeding that of direct investment, thus promoting the development of Korea's financial markets[12].

4. Improving Operations of China's Pension Fund

4.1. Create investment management suited to china's pension insurance system

China today provides basic pension insurance by combining social pooling and individual accounts. The accounts differ in how they raise funds, disburse payments, and manage their affairs. Social pooling raises funds on a pay-as-you-go basis, following the principle of "determination of revenue according to expenditure to enable a slight balance" and balances short-term revenue and expenditure. Individual accounts raise funds through accumulation, following the principle of "determination of expenditure according to revenue." Some assets are raised in advance for special-purpose payments, which is a practice that benefits the system's long-term financial balances[13].

Given the differences in the sources of funding, investment management that is suitable for both funds should be established to enable decentralized management. Decentralized management means that the social insurance authority oversees the administrative management of funds. The independent

social insurance administration operates and manages social pooling accounts; an individual account management committee or fund manager operates individual account funds. The social insurance authority, the MoF, the social insurance fund supervision committee, and an external supervisor jointly direct the fund. This separation of powers delineates responsibility among departments, separates administration and fund management, and increases managerial efficiency.

4.2. Seek for diversified investors and investment targets

As capital markets expand, populations age, and pension fund obligations rise, social insurance organizations(individual account management committees) might hire investment managers to conduct diversified operations. That is China's best current option. In Korea, the pension fund is operated by fund companies or specialized organizations. Specialized managers oversee high-risk assets, and social insurance organizations invest directly in low-risk assets(bonds). This system of capital allocation better diversifies risks and improves ROI. Incentive mechanisms and enhanced supervision of agents are needed to propel active investment.

4.3. Establish policies and targets for pension fund investments and management

As the scale of pension funds expands, it is becoming increasingly important for funds to preserve and increase valuations. Operations and management should be based on independence, accountability, and professionalism. Accountability requires a fairer system for evaluating asset allocation[14]. Independence means that fund managers should be independent of the government. Professionalism means that the committee should consist of professionals, which boosts the efficiency of fund management and investment operations[15]. With these three principles, the fund management and operation committee can advance in the right direction while preserving and increasing valuations.

Funds should operate to produce benefits for beneficiaries, and operating principles

should be tailored to that goal. Investments in national debt and bank deposits should be reduced, and investment in domestic and foreign equities should be increased. In other words, China needs more active and open investments. Potentially higher risks can be held within a permissible range while pursuing results.

4.4. Better supervision of investments

Given its special status, China's individual account system demands strict investment supervision. To protect the interests of beneficiaries, the supervision and control of social insurance organizations and investment managers must be enhanced externally[5]. The mechanism for supervising investment operations should be established alongside investment operations lest investments and operations be poorly regulated and controlled. What's more, laws and regulations must assure the authority and validity of supervision. Guidelines for investment risks should be researched. A specialized organization should monitor risks and moderate losses.

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Quality Characteristics of Fresh Ginseng Junkwa SAFETY from Sugar: Republic of KOREA

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Abstract

People living this modern world where not only changes in the food culture but also many other factors that have harmful effects on their health find the means to prevent the various habit diseases and adult diseases from the food products they encounter all the time. The junkwa traditional food in Korea, and how it is difficult to manufacture. So very high calorie.

In this study, using the rice cooker is to simplify the method of junkwa made with fresh ginseng.

The following is the summary of the study.

This study examined low calorie sweeteners (xylitol, oligosaccharide, stevioside, erythritol) instead of sugar for fresh ginseng junkwa to satisfy customers' health needs. After adding sugar, xylitol, oligosaccharide, stevioside and erythritol to fresh ginseng junkwa. The fresh ginseng (Gangwha, 4 yrd old) chosen to make junkwa adding xylitol, oligosaccharide, stevioside, erythritol were 2cm in width and 15 cm in length that were fairly straight in shape. Fresh ginseng was cut into pieces of 7 mm thickness and 500 g of the cut ginseng were parboiled in 1L of boiling water in a pot (stainless, diameter : 20 cm, height : 15 cm). The fresh ginseng was then drained off of water on a mesh strainer and the 500 g of water that was boiled with fresh ginseng and 500 g of sugar were put together in an electronic rice cooker and were stirred to melt the sugar. When the sugar was totally dissolved into water, the 500 g of previously boiled fresh ginseng pieces were put into boiled liquid and was boiled down together for 205 minutes, and then was drained off the liquid on the mesh strainer and was examined for the experiment. Fresh ginseng junkwa added with xylitol, oligosaccharide, stevioside, erythritol were also produced through the same procedure. The fresh junkwa produced were put into experimentation under the room temperature of 24 °C for 12 days.

The moisture level of junkwa made with fresh ginseng at different sweeteners were the lowest in the added with oligosaccharide. The chewiness and L-values were same to the lowest in the added with oligosaccharide. The difference in sweet taste showed that the fresh ginseng junkwa with oligosaccharide met the requirement of all storage periods.

Therefore, oligosaccharide was a good ingredient for fresh ginseng junkwa.

[Keywords] Junkwa, Sweetener, Fresh Ginseng, Moisture Level, Sugar Level

1. Introduction

Health supplementary food products and health purpose food products refer to the easily encountered foods that are taken for the purpose of preventing various habitual diseases and adult diseases, and interests in the consuming of not only the staple foods but

side foods, snacks, and drinks of such products are increasing.

Along with newly standing out food ingredients, modern day people are considering traditional medication ingredients as health

supplementary food and health purpose food, and amongst the most consumed and also produced as processed food products is the Korean fresh ginseng[1].

So far the researches on the use of fresh ginseng or ginseng were with traditional folk wine[2], yogurt[3], cookies[4] but there barely has been a research on Korea's traditional junkwa which is capable of mass production.

Korean traditional snack junkwa has a sweet and chewy texture that is derived from boiling down the parboiled roots of vegetables or fruits with honey. Junkwa is another named jungkwa.

Vegetables that has been used to make junkwa are ginseng, balloon flower roots, ginger, carrots and other vegetables. Junkwa has usually been taken as a favorite food of royal family and noble class and was accompanied with teas. However, western influence on food culture introduced various western snack that led to decrease in the consumption of junkwa[5], and while the western snacks have satisfied the various tastes of consumers through its active development of new products and capability for mass production, junkwa which has a relatively complicated process of production and takes longer time has been produced only through a manual manufacturing by small amounts and is currently unable to satisfy the tastes of consumers[6].

It has been reported that consumers with higher preference for well-being choose Korean traditional snacks instead of western snacks and prefer the ones that were made with organically raised ingredients or natural Korean medicine ingredients.

While the fresh ginseng is the most consumed among health functional foods currently available[1], junkwa takes only 3% of consumption among the processed foods made with fresh ginseng[7]. Previous researches on junkwa produced with ingredients boiled down with addition of sugar content are lotus root junkwa[8][9][10][11][12][13][14] and the research by Cho & Kim[15] that uses electronic rice cooker for convenience to solve the problem of complexity of

process and time consuming when producing fresh ginseng junkwa.

In addition, since junkwa is produced with excessive amount of honey or sugar which is not helpful in preventing adult disease, there has been several researches on alternative sweeteners that can take the place of sugar and honey but most of the researches have been concentrated around the use of oligosaccharide[14][15].

There is only one research on the sweeteners which can be an alternative choice for boil liquid of fresh ginseng junkwa by Cho & Kim[13] that used xylitol, oligosaccharide, stevioside, erythritol and studied their effects on the quality.

Also the characteristic of junkwa when tasted is its unique chewiness and clarity and while each of the sweeteners is assumed to affect junkwa's unique taste characteristics in the process of boiling down together with the ingredients, research on this has rarely been done.

Therefore, this research aimed to find the quality characteristics of fresh ginseng junkwa using low calorie sweeteners - xylitol, oligosaccharide, stevioside, erythritol in place of honey and sugar used to boil down junkwa, and the effects of storage period.

As junkwa has its own unique characteristic of clarity and chewiness, by the examining on the effects of storage period through measuring moisture level, chewiness, and lightrness, the research intends to develop Korean traditional snack the fresh ginseng junkwa that meets the taste of consumers.

2. Experimental Methods

2.1 Moisture level measurements

Moisture level was measured by putting each 3g of fresh ginseng junkwa through the halogen method(110°C, A60) of the moisture analyser(Moisture Analyzer, MB 45 OHAUS, USA). Each of the samples were measured five times to derive the average.

2.2. Chewiness measurements

After sugaring of the fresh ginseng junkwa, its chewiness were measured using texture analyzer(TA-XT Express, Stable Micro Systems, UK) with 2 mm cylinder probe(Pre-test speed: 3 mm/s, Test speed : 2 mm/s, Post-test speed: 3 mm/s, Distance: 1.5 mm, Time: 3 sec, Trigger Force: 5 g).

2.3. Lightness measurements

The lightness was measured using color meter(Color meter, JC-801, Color Techno Co, LTD, Japan); the junkwa was put into cylindrical container(35 × 10 mm); each sample was measured five times and its average was used.

2.4. Statistical methods

The results of fresh ginseng junkwa's moisture level, chewiness, lightness were analyzed using ANOVA, and the significance test was done through Duncan's multiple test at $p < 0.05$. The analysis used SPSS WIN program 20.0.

3. Results and Discussion

3.1. Changes in the moisture level of fresh ginseng junkwa

The result of measuring moisture level of the fresh ginseng junkwa that was produced with xylitol, oligosaccharide, stevioside, erythritol and kept in room temperature of 24°C for 12 days is as in the following <Table 1>.

The fresh ginseng junkwa boiled down with sugar, the control group, had 28.60% of moisture level on the first, on the twelfth it was

22.51% that it was found that as time passed the moisture level decreased significantly($p < 0.001$). The day junkwa was added with xylitol showed 17.16%, 15.46% on the twelfth day that it showed the decrease in moisture level just as sugar did($p < 0.001$). Junkwa made with oligosaccharide showed 39.88% on the day it was produced, 39.01% on the third day, 36.21% on the twelfth($p < 0.001$), and the junkwa made with stevioside showed 60.01% on the first day, when twelve days have passed the moisture level measured was 50.93%($p < 0.001$). Junkwa made with erythritol showed 22.98% on the day it was produced, 21.52% on the third day, and 16.25% on the after twelve days that as the time went the moisture level significantly decreased($p < 0.001$). Compared to other samples, xylitol and oligosaccharide junkwa showed less decrease in moisture level, and the junkwa made with stevioside showed much decrease in moisture level compared to the ones made with other sweeteners. This is thought to be due to the difference in the fresh ginseng's ability to retain moisture which depends on the form of bonding formed between ginseng's free water and crystal of the sweetener.

Therefore, based on the measurement of moisture level, the junkwas that showed the least change in the moisture level from the first day they were produced were the ones made with xylitol and oligosaccharide that they are the most suitable for storage and eating.

Table 1. Changes in moisture level of fresh ginseng junkwa made with different sweetener during storage at 24°C for 12 days.

Sample	Storage(Days)					F-value
	0	3	6	9	12	
Control ¹⁾	³⁾ 28.60± 0.96 ^a	28.5C7± 1.19 ^a	24.62± 1.36 ^b	24.16± 1.09 ^b	22.51± 1.09 ^b	17.229 *** ⁴⁾
Xylitol ²⁾	17.16± 0.48 ^a	16.84± 0.29 ^a	16.64± 0.19 ^{ab}	16.23± 0.12 ^b	15.46± 0.18 ^c	16.108 ***
Oligo-saccharides	39.88± 0.20 ^a	39.01± 0.36 ^b	37.58± 0.75 ^c	36.72± 0.62 ^c	36.21± 0.04 ^d	44.168 ***
Stevioside	60.01± 0.69 ^a	57.57± 1.92 ^b	55.80± 0.68 ^{bc}	53.95± 0.51 ^c	50.93± 0.83 ^d	31.976 ***

Erythritol	22.98± 0.03 ^a	21.52± 0.47 ^b	20.38± 0.26 ^c	18.47± 0.17 ^d	16.25± 0.21 ^e	285.492 ***
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Note: ¹⁾Control: Ginseng *junkwa* made by the sugar.

²⁾Ginseng *junkwa* made with xylitol, oligosaccharides, stevioside and erythritol

³⁾Mean±Standard deviation. ⁴⁾*** p<0.001

^{a-e}Means in a row by different superscripts are significantly different at the p<0.05 by Duncan's multiple range test.

3.2. Changes in chewiness of fresh ginseng junkwa

The result of measuring the chewiness of the fresh ginseng junkwas produced with different sweeteners and kept in room temperature of 24°C for 12 days is shown in the following <Table 2>.

As for the control group the chewiness of the first day of production was 254.49-409.93 on the twelfth day that as time passed the chewiness increased(p<0.001). The junkwa made with xylitol showed 278.63 on the first day, and 392.37 on the twelfth day that as time passed the chewiness gradually increased(p<0.001). Junkwa with oligosaccharide showed 229.70 on the first day, 354.11 on the twelfth day(p<0.001); junkwa

with stevioside showed 321.98 on the first day, twelve days the chewiness was 466.62(p<0.001). Junkwa with erythritol showed 251.09 on the first day, and after 12 days it showed 440.57 that after 3 days passed significantly noticeable increase in chewiness was observable in the fresh ginseng junkwa(p<0.001).

Therefore based on the measurement of chewiness change depending on storage period, the sample that showed the least change was junkwa made with oligosaccharide and this was the same result with the measurement of hardness on various periods. Thus it was observed that oligosaccharide is the most suitable for making junkwa and for storage.

Table 2. Changes in chewiness of fresh ginseng junkwa made with different sweetener during storage at 24°C for 12 days.

Sample	Storage(Days)					F-value
	0	3	6	9	12	
Control ¹⁾	³⁾ 254.4± 11.07 ^e	288.22± 8.94 ^d	330.79± 2.65 ^c	379.81± 18.50 ^b	409.93± 5.01 ^a	105.792 *** ⁴⁾
Xylitol ²⁾	278.63± 4.78 ^e	303.34± 3.17 ^d	330.38± 3.31 ^c	361.45± 3.94 ^b	392.37± 7.15 ^a	276.967 ***
Oligo-saccharides	229.70± 2.94 ^e	269.24± 5.23 ^d	282.63± 1.62 ^c	308.50± 2.45 ^b	354.11± 2.69 ^a	617.244 ***
Stevioside	321.98± 21.11 ^e	358.11± 7.44 ^d	391.80± 10.22 ^c	419.81± 8.66 ^b	466.62± 5.85 ^a	64.971 ***
Erythritol	251.09± 7.18 ^e	313.14± 11.58 ^d	368.11± 11.64 ^c	397.26± 6.66 ^b	440.57± 19.77 ^a	108.083 ***

Note: ¹⁾Control: Ginseng junkwa made by the sugar.

²⁾Ginseng junkwa made with xylitol, oligosaccharides, stevioside and erythritol

³⁾Mean±Standard deviation. ⁴⁾*** p<0.001, ** p<0.01

^{a-c}Means in a row by different superscripts are significantly different at the p<0.05 by Duncan's multiple range test.

3.3. Changes in lightness of fresh ginseng junkwa

The result of measuring the changes in lightness(L-value) of the fresh ginseng junkwas produced with different sweeteners and

kept in room temperature of 24°C for 12 days is shown in <Table 3>.

The sample group showed 42.23 of lightness on the first day it was produced, 37.75 on the twelfth day that as time passed the lightness significantly decreased($p<0.001$). Junkwa with made with xylitol showed 42.05 on the first day, and 34.98 on the twelfth day that as time passed the lightness gradually decreased($p<0.001$). Junkwa with oligosaccharide showed 48.97 on the day of production, 48.68 on the third day, and 46.44 on the twelfth($p<0.001$); junkwa with stevioside showed 56.61 on the first day, 51.60 on the twelfth($p<0.001$). Junkwa with erythritol

showed 53.61 on the first day, and after twelve days it was 50.33 that all the samples showed significant decrease in lightness as time of storage got longer($p<0.001$). This can be an effect of decrease in moisture level as time passes that leads to the darkening of the color of junkwa. Kwon & Park[12] also reported that the lightness of junkwa made of balloon flower roots also decreased as the storage period got longer which is similar with the results of our research.

It was observed that compared to other samples, the fresh ginseng junkwa made of oligosaccharide did not show much change in its lightness during the storage.

Table 3. Changes in lightness of fresh ginseng junkwa made with different sweetener during storage at 24°C for 12 days.

Sample	Storage(Days)					F-value
	0	3	6	9	12	
Control ¹⁾	³⁾ 42.23± 0.04 ^a	42.05± 0.08 ^a	40.19± 0.32 ^b	39.18± 0.28 ^c	37.75± 0.33 ^d	174.319 *** ⁴⁾
Xylitol ²⁾	42.05± 0.08 ^a	40.56± 0.40 ^b	39.04± 0.17 ^c	36.01± 0.78 ^d	34.98± 0.33 ^e	144.343 ***
Oligo-saccharides	48.97± 0.03 ^a	48.68± 0.16 ^b	48.35± 0.09 ^c	47.06± 0.11 ^d	46.44± 0.13 ^e	266.159 ***
Stevioside	56.61± 0.09 ^a	55.92± 0.05 ^b	55.67± 0.05 ^b	53.46± 0.29 ^c	51.60± 0.24 ^d	404.302 ***
Erythritol	53.91± 0.07 ^a	53.01± 0.03 ^b	52.77± 0.14 ^c	51.60± 0.10 ^d	50.33± 0.36 ^e	196.013 ***

Note: ¹⁾Control: Ginseng junkwa made by the sugar.

²⁾Ginseng junkwa made with xylitol, oligosaccharides, stevioside and erythritol

³⁾Mean±Standard deviation. ⁴⁾*** $p<0.001$

^{a-d)}Means in a row by different superscripts are significantly different at the $p<0.05$ by Duncan's multiple range test.

4. Summary and Conclusion

The result of measuring junkwa's unique chewiness and clarity by producing fresh ginseng junkwas with sugar, xylitol, oligosaccharide, stevioside, erythritol boil liquid and kept in room temperature of 24°C for 12 days is as follows.

Moisture level of fresh ginseng junkwa shows that as time passed the moisture level significantly dropped in all samples; the samples that showed least change in moisture level were the ones produced with xylitol and oligosaccharide.

Change in chewiness the junkwa made with oligosaccharide showed significantly small change as the storage time passed.

Color of junkwa showed that the yellowness of junkwa made with oligosaccharide does not change much during the 12 days of storage compared to other samples while there was significantly.

Therefore, while there was not a distinct tendency found in moisture level, chewiness, lightness of the fresh ginseng junkwa made with various sweeteners depending on the storage period, the fresh ginseng junkwa

made with oligosaccharide which showed less change in moisture level, chewiness compared to other samples, and less change in lightness measurement is observed to be the best in quality. Thus it was observed that producing junkwa with oligosaccharide instead of sugar can enable the produce of junkwa with low calorie which will meet the health needs of modern day people.

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An Analysis on Importance of CPTED Planning Factors to Make SAFETY Boundary Space at Condominium Complex in Republic of KOREA

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Abstract

In the past boundary space in the condominium complexes was closed space however, recently it is changing that the space is recognized like physical and social perception of the open public space or partly open space. According to this point of view, the boundary space in condominium complexes have significant meanings for interaction between housing dwellers and local community on the other hand, there is weakness part that it is highly vulnerable to crime.

Therefore, this study attempted to identify CPTED planning factors about the boundary space to prevent crime and analyze the importance of them which is reflected openness in the apartment housing complexes. In addition the main purpose of the research is suggesting the right direction of planning open boundary space that it is able to interact with the local people and safe for residents so, this research examined the importance of planning factors thought AHP analysis.

To eliciting the urban design factors, it was selected the planning principles of CPTED as a superordinate concept. There are some principles such as natural surveillance, access control, territory reinforcement, revitalization of community activities and maintenance management. However, it excluded the maintenance control in fact that it was the principle after the city plan set up and it is an unsuitable planning factor for this research. The following step, it considered literature review, CPTED guideline and it classified a comprehensive list of elements. Finally it deduced them using literature review, brain storming, FGI(Focus Group Interview).

The quantitative research method was used to investigating the importance. The questionnaire started during 4th to 14th October 2016 and it targeted over postgraduate students, research institute and the other expert at the related engineering company. The research method carried out an individual interview and online survey and it distributed 100 questionnaire papers and 83 % of them returned. But, only 67 surveys presented that consistency index(C.R) was below 0.1 and which means the research standard is over 90.

The result of analysis showed that it has to presenting natural surveillance and revitalization of community activities, cooperation and interaction among the residents rather than promoting closeness and creating private spatialization within the boundary space like access control and territoriality reinforcement.

Therefore, the boundary area in the condominium complex should be established as an open space for local revitalization and communication between residents and their neighborhood. Moreover, it ought to prevent crime or accident through the interaction and social activities with local people and residents for a safe city.

This study bears great significance that it has investigated and developed the importance of CPTED planning factors about boundary space in the apartment housing complex based on openness of the area and it may be use for the basic data for designing crime prevention regarding to boundary space in the condominium complex.

[Keywords] Condominium Complex, Boundary Space, CPTED, Safety, Planning Factors

1. Introduction

In the past, boundary area in the apartment housing complex construct closed fence, high sound proof wall and hedge and it interrupted the flow of interaction between inside and outside of the condominium complex. It has created sense of fear and otherness with surrounding environment beside, it has occurred social problem internally and externally.

However, current boundary space in housing complex becomes mainstream medium for connecting to the inside of complex and surrounding area and physical and social awareness is changing as an open public space and partly public area.

According to the same point of urban planning, advantage of boundary space within apartment complex is useful for interaction but it has high risk of being exposed to crime.

Therefore, the main purpose of this research is examining CPTED planning factors to prevent crime and accident around the boundary space, analyzing the importance of the element and advocating the scheme on urban plan of safe boundary space.

The following is the gist of this study in detail.

The first, it considers literature review associated with the boundary space of housing complex and CPTED and contrives the outcome of the research.

The second, it sums up and categorizes the planning factors which are presented within boundary space, apartment complex and CPTED.

The third, it changes and improves the planning elements of urban design through brain storming and FGI(Focus Group Interview).

The forth, it identifies final planning factors by the expert survey method and carries out AHP analysis after then it examines the importance of planning factors.

Finally it suggests the implication of CPTED plan in relation to the safe boundary area in condominium complex.

In this research, the boundary space is reflected openness of the apartment complex defines the border construct with opened fence and outdoor wall and connects to the pedestrian pathway and the road.

Thus it is not simply construct with partition wall and it means the space is able to communicate between residents and local people such as a rest facility, pedestrian pavement and opened main entrance.

2. Literature Review and the Aspect of the Study

To considering the literature review in terms of boundary space and condominium complex,

Lee(2014)[1], Choi(2004)[2] figured out the problem of boundary space and produced the way of improvement also, Ha(2012)[3], Han(2010)[4] and Jo(2009)[5], advocated the solution to improve the boundary area through feature analysis, comparative analysis and environmental analysis. In addition Yoo(2007)[6] and Kim(2005)[7] looked into the plan content using the case study.

After reviewed the advanced research linked with the housing complex and CPTED, Kim(2015)[8] resolved the satisfaction to applying CPTED in the apartment area and. Lee(2016)[9] investigated the scheme to avoid accidents as the security of personal privacy in one person household. Yoon(2015)[10] insisted the high quality of guideline for planning crime prevention.

According to examine the literature review, recently many city plan focused on open space but there are lack of expertise to study crime safety for the boundary space in the apartment complex.. Moreover, most of thesis evaluates just about the CPTED and housing complex so, it is required to investigating the application of CPTED to the boundary space in the apartment area. Hence, this research attempt to

explore planning factors to make crime-free environment while it design the boundary space after then it analyzes the importance of the factors and it suggests future plan.

3. Plan Factors and Derivation of the Element

Above all, it will examine the CPTED plan factors and related elements as the following stages.

The first, it set up a design principle of CPTED as a superordinate concept and there were some plan principles such as natural surveillance, access control, territory securement and revitalization of community activities and upkeeping. However, maintenance is the concept after the plan carries on and it is not appropriate factors so it was decided to exclude it.

Table 1. Basic principle of CPTED and contents[11].

Basic principle	Contents
Natural surveillance	The principle to protecting the victim of crime or accident and easily expose criminal behavior.
Access control	The principle to derive people to the certain space like road, landscape and main entrance also controlling strangers to do not access the complex.
Territory reinforcement	The principle to indentify the certain area is the public space or private space clearly and definite the responsibility of management in the area.
Revitalization of community activities	The principle to promote the residents and local people communicate in the public area and make themselves get urban tribe and a sense of security.
Maintenance	The principle to conform that the space and facilities are utilized and upkeep properly as it designed at the first time.

The second, it evaluated CPTED guideline and literature review to sum up and classify the planning factors. But the advanced research related with CPTED planning elements of boundary space does not exist so this research reviewed the building design guideline for crime prevention published by the Ministry of land, infrastructure and transport(2013)[12], the design principle to crime prevention by the National police agency(2007)[13], the environmental design guideline for crime safety and housing environmental management system in Seoul(2013)[14], and then it summarized and classified the planning factors based on them. As a generic concept, planning factors were selected like natural surveillance, ac-

cess control, territory securement and revitalization of community activities after then it expressed the correctly related elements as a subordinate concepts at the first stage.

The third, it made complementary measure about the planning factors through brain storming and FGI which were selected at the first step. It was hard to get some information link with CPTED planning factors in terms of boundary space in apartment housing due to lacks of resource. It advocated part of data in detail from the guideline and collected various opinions from the professionals.

The final planning factors selected via planning principle, guideline review, brain storming and FGI are below.

Table 2. Final planning factors and criteria derivation.

Basic principle	Planning factors
Natural surveillance	<ul style="list-style-type: none"> - Natural monitoring about pedestrian road. - Pockets and dark corner clearance (maintenance of interspaces of trees, maintenance of interspaces of facilities). - Crime prevention and installation of lighting system and CCTV for security. - Set up landscape and perspective walls in private area except the opened main Entrance.
Access control	<ul style="list-style-type: none"> - Easy to find main entrance and access control for strangers. - Build up a outer wall to stop trespass. - Equip lighting and access control system between the space of buildings. - Set up fence in private space.
Territory securement	<ul style="list-style-type: none"> - Definite division between public and private spaces. - Clarity of main entrance and outer boundary. - Certainty regarding to location information and use of space. - Considering color and lighting for territory securement.
Revitalization of community activities	<ul style="list-style-type: none"> - Connection with diverse facilities for activation of outer space. - Space arrangement to promote the implication of community strengthening. - Minimization for the influence of dangerous place due to harmful materials. - Diversification of space structure and recuperating shopping stores (Invigoration of community activities).

4. Examination of the Importance through AHP Analysis

Analytic Hierarchy Process (AHP) was founded by Thomas. L. Saaty in 1970. It is especially effective and efficient to discover

complicated phenomenon and it is widely apply to analyze the importance in order of priority. Therefore, this study tried to evaluate the importance of criteria and CPTED planning factors of boundary space within the apartment complex using AHP.

Table 3. Sample of the survey toward the importance comparison using AHP analysis.

Importance comparison of planning factors in the cluster called 'natural surveillance'																		
1. Do you think how much important is 'the natural surveillance about pedestrian pathway (A1)' than 'the establishment of lighting system and CCTV to prevent crime and security(A2)'?																		
A1	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	A2

It was considered to enhance quantitative research method to investigate the importance of planning factors and elements focused on expertise and professionals.

It surveyed from October 4th 2016 to October 14th and the members of academic community (over postgraduate course), research institute and related engineering

company answered. The research method was individual interview and online research via internet.

It circulated 100 questionnaires and 83 out of 100 the respondents filled in also it represented only 67 surveys carried out consistency Index or CR under 01 and the standard level over 90.

Table 4. Result of the survey collection.

Division	No. of distributed questionnaires papers	No. of returned questionnaires papers	Collection rate(%)
Researchers	30	26	86.67
Academic community	30	22	73.33
Others	40	35	87.5
Total	100	83	83.0

The outcome of importance via AHP analysis is follows,

According to the result of importance linked with CPTED planning factors, the natural surveillance is the most essential factor (importance: 0.351). Subsequently the following factors were occurred; revitalization

of community activities(0.312), territory reinforcement(0.225) and access control (0.112). It can be explained that the natural surveillance has to concern as a major key factor to design crime safety environment at the boundary space in the housing complex.

Table 5. The result of importance of planning factors through AHP analysis.

Planning factors	Importance	Planning criteria	Detail priority	Importance in total
Natural surveillance	0.351	The natural surveillance about pedestrian pathway	0.321	0.113
		Pockets and dark corner clearance (maintenance of interspaces of trees, maintenance of interspaces of facilities)	0.423	0.148
		Crime prevention and installation of lighting system and CCTV for security	0.135	0.047
		Set up landscape and perspective walls in private area except the opened main entrance	0.121	0.042
Access control	0.112	Easy to find main entrance and access control for strangers	0.333	0.037
		Build up a outer wall to stop trespass	0.210	0.024
		Equip lighting and access control system between the space of buildings	0.245	0.027
		Set up fence in private space	0.212	0.024
Territory securement	0.225	Definite division between public and private spaces	0.375	0.084
		Clarity of main entrance and outer boundary	0.305	0.069
		Certainty regarding to location information and use of space(signboard etc.)	0.098	0.022
		Considering color and lighting for territory securement	0.222	0.050
Revitalization of community activities	0.312	Connection with diverse facilities for activation of outer space	0.333	0.104
		Space arrangement to promote the implication of community strengthening	0.413	0.129
		Minimization for the influence of dangerous	0.098	0.031

		place due to harmful materials		
		Diversification of space structure and recuperating shopping stores(Invigoration of community activities)	0.156	0.049
Total	1.000	Total	1.000	1.000

After analyzing the overall importance about CPTED planning factors, it resolved that pockets and dark corner clearance(maintenance of interspaces of trees, maintenance of interspaces of facilities) is the most important planning criteria to design safe boundary space in housing complex(total importance: 0.148). The next, it illustrated that space arrangement to promote the implication of community strengthening(0.129) and natural monitoring about pedestrian pathway(0.113).

So, it founded further urban plan has to promote social activities in the community, cooperation and interaction between the residents and local people rather than closed design plan like access control at the boundary space in apartment housing.

5. Conclusion

To summarize this article, it examined CPTED planning factors and criteria for crime prevention. After then, it analyzed the importance of each factors and presented the scheme of the boundary area because many borderline space in the condominium complex has changed to the public space and partly public space.

According to the result of the analysis, it can be considered that the design scheme of boundary space has to promote social activities in the community and naturally cooperation and interaction between residents and local people for crime prevention rather than emphasizing closeness and private spatialization such as access control and territory securement.

Therefore, the boundary space in the apartment housing should be systemically planned for the open space to encourage the revitalization of local community and communication between the residents and local

people for safe city. Consequently they have to protect their residential area from accidents and crime through bilateral collaboration among them.

This research has significant meaningful to investigating the CPTED planning factors and criteria in terms of the boundary area in the condominium complex and identify the importance of each elements. Moreover it may be use for the basic data for making crime prevention scheme regarding to boundary space in the apartment housing.

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