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## Teacher's Professional Development through "Affiliated Schools as Community of Practical Research and Learning": Alternatives for KOREAN Public Education in CRISIS

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### Abstract

*Korean public education is in crisis. So-called 'School collapse phenomenon' is worsening along with ever-flourishing private education, school violence, and failure of personality education. Taken for granted educational standards are being lost, and traditional pedagogical paradigm is being negated. Representation and legitimacy of educational research are at risk, while prudent choice and authentic dialogue from educational practice can be found nowhere. In the midst of the crisis, this article is suggesting a variety of ideas to innovate the endangered Korean public education. At the center of the ideas is the 'Affiliated Schools'. Affiliated schools in Korea have a great potential to reform and innovate the public schooling in that they share many characteristics as 'practical research community'. Therefore, this study suggests organizing a community of practical research and learning, composed of college of education and its affiliated schools, while teachers in the community work as a 'performer of institutional function', 'leader', 'learner', 'cultural mediator', and 'critical reflector'. This study also suggests installing a central agency to diffuse and expand the research outputs and local knowledge from that community and the agency is named as KTCLC, Korean Teacher Consulting and Leadership Center. There is neither a clear solution nor a driving force to overcome the present crisis of Korean education. In the midst of this stalemate, establishing a practical research and learning community can be a seed of hope for endangered Korean public education. Hopefully the teachers, who are leaders, learners, practical researchers, critical reflectors, and cultural mediators, can create and to become a foundation for more just education where every single student can bring out their best potential possibilities. Then we can dream of the education for hope, to replace this age of pain.*

**[Keywords]** Professional Development, Affiliated School, Community of Practical Research and Learning, Public Education Reform, Korean Public Education in Crisis

### 1. Introduction

Korean society is located at the center of turbulent transformative waves, which can be defined with revolutionary development of Information Technology, postmodernity of flexible truths and knowledge, opening and diversification of all the possibilities and potentialities[1].

In the middle of these changes, economic

difficulties such as unemployment and low income are getting aggravated, uncertainty and complexity, which cannot be controlled with modern rationality, are getting deepened, pushing the entire society into injustice, inequality, and pains. It is never too much to say that contemporary Korean society is passing through the "Age of Pain"[2].

Public education is not an exception. So-called 'School collapse phenomenon' is wors-

ening along with ever-flourishing private education, school violence, and failure of personality education. Taken for granted educational standards are being lost, and traditional pedagogical paradigm is being negated. Representation and legitimacy of educational research are at risk, while prudent choice and authentic dialogue from educational practice can be found nowhere[3].

Then, what need to be done and how should it be done to save this endangered public education of Korea?

## **2. Orientations for Korean Education**

Before rushing into the hasty answers, we need to establish what are the ideals and orientations for the Korean education and teachers.

### **2.1. Orientations for education**

First, we need to aim for a ‘just’ education. Justice is about how to distribute the scarce values and secure its legitimacy. Then justice in education is a question of just distribution of educational opportunities and legitimization of it. In this age of pain, Korean education has been degraded into an instrument for class reproduction and wealth polarization. Therefore, for students from low income family, education is merely an unjust social institution. The ‘just education’ this study seeks after is a respect for fair distribution of educational opportunity, a tolerance for and solidarity with the disadvantaged other, and an effort to preserve diversity and minority.

Second, we need to establish a new pedagogical paradigm. On top of the ground zero where traditional pedagogical paradigm is deconstructed, a whole new paradigm should be reconstructed. The new pedagogical paradigm should seek after the critical reflection on the traditional knowledge and hegemonic languages as well as the revision about how to read our lives. This is an effort to reconstruct the pedagogical paradigm from a critical and creative perspective of postmodern

way of thinking, replacing the modern paradigm and model based on modern rationality.

Third, collective intelligence or risk intelligence is required to solve the confronted problems. Considering the postmodern features and uncertainties of Korean society, and the limitations of modern rationality and traditional manual-based solutions to endangered society, it is a best way to share the problems, and to cooperate and communicate in decreasing the risk and increasing the efficiency. This collective intelligence gathers people’s intellectual abilities together, amplifying the trivial individual capabilities. In constructing the curriculum and reimagining the role of teachers in this age of pain, collective intelligence or cooperative intelligence is a noticeable alternative to overcome the crisis of public education.

### **2.2. Teachers’ roles**

Encountered with the ‘Age of Pain’, this study suggests ideals and missions of Korean teachers as following: Performer of institutional function, Learner, Leader, Cultural Mediator, Critical Reflector.

First, teacher as a ‘Performer of institutional function’ provides students of an appropriate learning experience based on a certified curriculum, and fulfills given role and function in the social institution. Fulfilling an institutional function is evaluated with how well the students mastered the taught curriculum contents, which is related to the ‘teacher effectiveness’. Teacher effectiveness is teacher’s ability to make students score higher in standardized examinations and such idea is based on essentialistic as well as behavioralistic cause-and-effect paradigm. For this, Coleman report once raised a question regarding this teacher effectiveness by suggesting that physical surroundings like school, family environment, and friends have more influence on students’ test scores[4].

Another perspective regarding teacher’s ideals is a teacher as a ‘learner’. It means that a teacher incessantly develops their knowledge, skills, and values to enhance stu-

dents' competence as well as learns and practices new professional knowledge and theories[5]. When a teacher is empowered, he/she will recognize and learn more deeply about one's own role in participating in the teacher community and the policymaking. Then the teacher should work as a driving force for a change to contextualize the new knowledge and understanding about classroom, and in doing so, the teacher as a learner grows up to a teacher as a 'leader'.

Although teacher leadership can be defined in a various way, its emphasis is on the classroom teaching and teacher community, and its focus is the educational practice and cooperation among teachers. Therefore, teacher as a 'Leader' collaboratively works with and influences the other educational agents – such as students, parents, and other teachers – to improve their educational practices inside and outside of classroom and teacher community[6][7][8][9]. Teacher as a leader is expected to be a broker of school improvement, to become participative in inducing other teacher's participation, and to become relational in forming an intimate relationship with the other colleagues.

On the other hand, Korean society is facing an increasing diversity and difference, and this diversity and difference have incurred a class, regional, and group difference, leading to the educational disparity and inequality. As Bourdieu mentioned, Korean society is also not free from the influence of cultural capital and reproduction of educational inequality. Therefore, it is required for teacher as a 'Cultural mediator' to mediate the surrounded cultural settings to deal with the problem of inequality and injustice in a classroom teaching, by challenging the learning culture, via communication with teachers, parents, and local community. It is an emphasis on the teacher's role as a cultural mediator through the intellectual conversation.

Teacher as a 'Critical reflector' continuously examine the institutional surroundings around them in a critical way, collaborating with the other teachers to improve such en-

vironments. Is the current curriculum desirable for students? Is the classroom learning suitable for students' life? Am I not biased in organizing a classroom teaching? Is my teaching pertinent in relation to the local community? To enhance the critical reflection, teachers need a trust from other teachers and a courage for success. Therefore, deviance credit and collective effort can minimize the loss and risk. Teacher as a 'Critical reflector' have to reflect on oneself and one's own voice. In doing this, teachers can eventually overcome the premise distortion and self-censorship device[10].

### 2.3. Teacher professionalism

Teacher professionalism means behavioral knowledge that teachers should know in seeking after the ideal image of teacher. Following the discussions above, teacher with professionalism is who has 'teacher knowledge' or 'professional knowledge of teacher' as a performer of institutional function/learner/leader/critical reflector/cultural mediator. This teacher knowledge can empower the teachers themselves.

Teacher knowledge includes various types of knowledge. This includes content knowledge and pedagogical knowledge, and knowledge of policymaking and teacher organization, communicative knowledge, and even passions, authority, and trust.

But we need to remember that what is required for the 'Teacher professionalism' is not an administrative or economic perspective, but a more democratic perspective, which cherishes a cooperative work with other educational subjects and fosters teacher's own practice and research. This is because the essence of school and schooling as a social institution is based on the negotiation and collaboration among the stakeholders and their mutual trust.

From this perspective of democratic professionalism, teachers pass through a 'self-generating' process while thinking and behaving reflectively, and therefore, their 'self-narrative' takes on an important significance. In other words, based on a 'courageous and

truthful voice', a teacher creates his/her own autobiographic narrative through critical reflection, and this helps teachers to develop a self-directed professionalism. In doing this, following four different perspectives will play an important role: Autobiographical perspective, students' perspective, peer teacher's perspective, and theoretical perspective.

### **3. Affiliated Schools and Korean Public Education Reform**

#### **3.1. Affiliated schools as 'community'**

In Korea, there are 41 'college of education', as a separate college or department along with other colleges inside a larger unit of university, and its purpose is to raise secondary school teachers. Also, there are 13 'national university of education' as an independent university with no other departments, and its sole purpose is to raise elementary school teachers. Each of these colleges and universities of education has its own affiliated schools – elementary, middle, and high schools, – which is a perfect condition for collaborative work between colleges and schools. Therefore, the affiliated schools have several characteristics as a 'community of practical research and learning', and this leads us to the clue to normalization and improvement of Korean public education. Then, why is this a 'community'?

First of all, the affiliated schools are 'community of practical research and learning'. Affiliated schools are installed as 'affiliated' institution of the college of education, and most of the teachers working at the affiliated schools are educated from its college of education. So it can be said that the affiliated schools are based on a qualitative partnership with the college of education, and it makes the affiliated schools a field of practical research. This community facilitates the interaction between 'research knowledge' of college of education and 'local knowledge' of affiliated schools.

Second, it is an educational community aiming for an immanent value, relatively free

from political ideologies. Today, most of Korean schools are still trapped in an ideological dispute and therefore not free from the over-politicization[11]. However, the affiliated schools are in close relationship with the college of education, whose purpose is fostering future teachers, and this purpose of the institution make the affiliated schools relatively free from such political dispute. And this makes the community a perfect place for professional development of teachers through collaborative as well as autonomous practical research.

Third, it is a community with national network, and this functions as a great advantage in spreading out the research outputs. Every affiliated school installed in the college of education in Korea share its purpose: fostering a prepared teacher. Although they are not part of the single institution, their ideal, orientation, and mode of operation are similar enough to construct a 'network'. This implies that any new pedagogical model or innovative idea or local practical output can be diffused nationally through this national network of affiliated schools.

Fourth, the affiliated school is an educational community with pride – a pride of caring for the students, and a pride of professional development – which are teacher's responsibilities and duties. And the fact that those teachers with pride, who are still abiding by their responsibilities and fulfilling the duties, are constructing the affiliated schools, leaves us one last hope: Affiliated schools and its teachers are the last resort for Korean public education reform.

#### **3.2. Community of practical research and learning**

In other words, the affiliated schools have great potentials for Korean education reform. Therefore, this study suggests to organize a 'Community of practical research and learning' composed of the college of education and the affiliated schools in an attempt to develop teacher's professionalism and to innovate the endangered Korean public education. And this community of practical research and

learning would be built on a principle of ‘Co-generative dialogue approach’, ‘Practical knowledge’, and ‘SMART education’.

First, the principle of co-generative dialogue approach implies ‘open dialogue’ that every voice of the related people has an equal value, and that they all cooperate in producing the outputs[12]. Here the ‘dialogue’ needs to be understood as a principle of mutual becoming and reciprocal cooperation than an actual conversation. Therefore, affiliated schools’ teachers and students, university’s professors and pre-service teachers will cooperatively work to deal with the practical problems and acquire theoretical insights to establish a close relationship between the affiliated schools and the college of education. In a word, this co-generative dialogue and theoretical practical liaison can narrow the relevance gap[13] found between theory and practice, and guarantees both academic rigor and practical value at the same time.

Second, the principle of practical knowledge is based on a respect for teacher’s accumulated wisdom[14][15] and an understanding about complex, contextual features of teaching and learning. The critical theories regarding teacher’s professional development emphasizes that teacher practice cannot be controlled, and college researchers cannot make a universalized prescription about what to do or not to do. In other words, teacher’s professional development should be more about practical knowledge which is complex and context-based rather than recognizing it as a mathematical function of input-process-output. Practical knowledge of teachers is the integrated system of knowledge, value, belief, and concept which all are developed through teacher’s teaching practice[16]. This practical knowledge is behavioral, acquired autonomously, personal and contextual, unconscious and tacit. So it can be said that practical knowledge is the whole of practical, experiential, and accumulated wisdom through years of teacher’s teaching experience.

Third, the principle of SMART education aims for a Self- directed, Motivated, Adaptive,

Resource enriched, Technology embedded education. The Ministry of Education of Korean announced SMART education as an important policy principle for the days to come, and these provide Korean public education of an important theoretical basis. Development of information technology incurs a turbulent transformation throughout the society including labor, trade, commerce, culture, and even communication. So it is both a wave that we need to face and a challenge that we need to overcome. All kinds of smart devices and smart media – symbolized as a smart phone – require us to innovate our educational discourses and practice at the same time. SMART education, therefore, aims to foster students who have critical thinking, originality, communicative ability and cooperative learning ability.

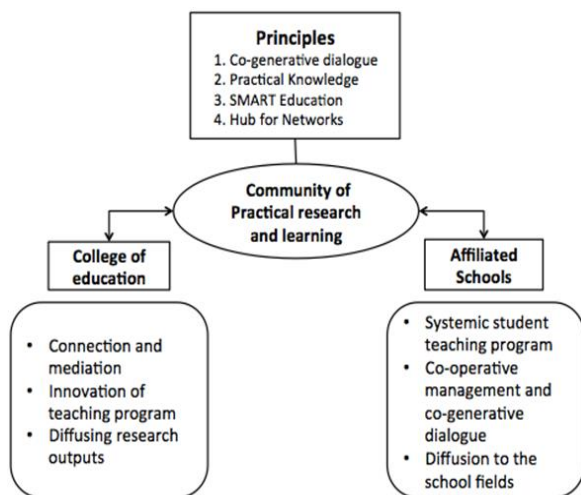
Lastly, both affiliated schools and college of education can work as a core hub for the development of Korean public education. No theoretical or practical improvement and renovation can find its authentic meaning when it cannot be diffused to a larger sphere. Diffusion of a model is a process in which innovations are communicated with the entire system and its members[17].

Based on these principles, the ‘Community of practical research and learning’ will contribute to a variety of purposes. First of all, co-works of affiliated schools and college of education can produce a great deal of practical field knowledge for classroom teaching and public education. Also, these co-works and researches will be able to grant a ‘communicative legitimacy’ for theoretical works of universities, and this will increase the applicability for a practice, which will consequently contribute to the national diffusion or expansion. In sum, the affiliated schools, together with the college of education, will assume a central role and function as a base-camp for the development of teacher professionalism and the renovation of entire Korean public education by providing a place for practical research and a learning community. <Figure 1>. illustrates the construction of this community of practical research and learning:



its principles, composition, and the expected roles.

**Figure 1.** Community of practical research and learning.



#### 4. Korean Teacher Consulting and Leadership Center (KTCLC)

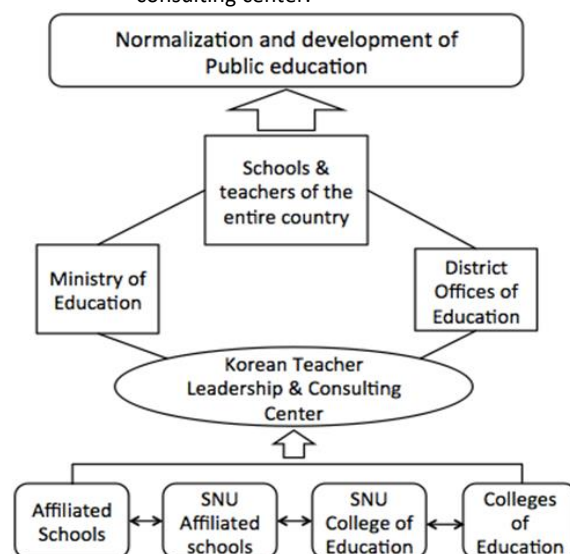
As we have discussed so far, the affiliated schools are perfect places to realize the professional development of teachers based on a democratic ideal. It has characteristic of a practical research and learning community, and can work collaboratively with college and university. Therefore, if we can compose and organize a practical research and learning community with affiliated schools and college of education, and make the community a network hub for Korean public education reform, it can be an important way to overcome the crisis of public education. However, as is mentioned, no theoretical or practical improvement and renovation can find it's authentic meaning when it cannot be diffused to a larger sphere. And to fulfill the role of a 'center' or 'hub', we need a more systematic central agency.

In that sense, this study suggests to install a KTCLC (Korean Teaching Consulting and Leadership Center) to function as that network hub. Installing this kind of network hub is a necessary condition for teacher's professional development, as well as for an establishment of practical research and learning community of pre-service teacher, in-service teacher, and college professors. Through this

central community, we can expect to construct and spread a new pedagogical paradigm for Korean education, and to recover an educational legitimacy through collaborative and intelligent dialogue as well as a prudent choice to overcome the crisis and conflict of Korean education.

In more detail, we can expect KTCLC to work on the following missions. KTCLC need to invigorate the connection between affiliated schools and college of education, and mediate the two sides. It can diffuse the innovative ideas made from affiliated schools' practices throughout the entire Korean schools. Therefore, KTCLC can work as a facilitator to distribute, utilize, and communicate the teacher professionalism or professional knowledge, and this can lead us to a chance to capsize the crisis into an opportunity. Also, in the long run, KTCLC can consult the all the college of education and its affiliated school regarding teacher professional development, and perform academic as well as practical researches. It should accumulate and circulate the educational data, to help to perform the missions discussed so far. And hopefully, these works can contribute to the normalization and development of Korean public education. <Figure 2> illustrates the roles and missions of KTCLC, which ultimately aims for the normalization and development of Korean public education.

**Figure 2.** Installing Korean teacher leadership and consulting center.



## 5. Education for Hope

In this study, we have launched our discussion beginning with the uncertainties, injustice and inequality of Korean society, and its resultant outcome of the 'age of pain'. The school collapse phenomenon derived from the society's problems, and tried to find out the solutions to this crisis of public education were also discussed. And for the solution, the affiliated schools and the college of education were suggested as a solution to the current crisis. They can function as a driving force to innovate and reform the endangered public education with their features of practical research and learning community. KTCLC was also suggested as a central agency or hub to diffuse the innovative ideas throughout the country.

At this moment in time, there is neither a clear solution nor a driving force to overcome the present crisis of Korean education. In the midst of this stalemate, establishing a practical research and learning community can be a seed of hope for endangered Korean public education. And hopefully the teachers, who are leaders, learners, practical researchers, critical reflectors, and cultural mediators, can create and to become a foundation for more just education where every single student can bring out their best potential possibilities. Then we can dream of the education for hope, to replace this age of pain.

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## Cause Analysis and Countermeasures for Industrial CRISIS in Three Northeastern Provinces of CHINA

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### Abstract

*Recently, as the Chinese economy has focused on the decline in economic growth rate, economic restructuring, and assimilation of demand stimulus policies, the burden of maintaining the growth rate of the Chinese economy is increasing. Previously, the three northeastern provinces of CHINA once led the growth due to the rich the natural resources and the Chinese government's policy support, but, after the reform and opening up, the three northeastern provinces have been falling rapidly in the comparative advantage or the share of GDP and stagnating in comparison with other regions. In particular, after CHINA entered the New Normal in 2014, the Chinese government implemented supply-side reforms completely, and put the focus of this reform on overcapacity of heavy industry and reform of state-owned enterprises. As a result, the economic growth of the three northeastern provinces, where heavy industries and state-owned enterprises accounted for a large portion of the economy, has been falling, and this trend is becoming more serious.*

*Based on the economic situation of the three northeastern provinces in 2016, this report analyzes the three aspects of industrial structure, corporate governance structure, and elemental resources, and chooses the three major causes of the economic CRISIS in the three northeastern provinces. First, there is a single industrial structure. Among the regional GDP, heavy industries, that is, the resource-intensive industries, account for a large portion of industry, and the development of technology-intensive industries is far behind. Second, the proportion of state-owned enterprises is very high. In other words, the structural problem of a company directly affects production efficiency. Third, the outflow of human resources is very serious. Due to various problems such as low-level industrial structure, lack of policy support, lack of enterprise innovation environment, etc. of the three northeastern provinces, high-quality human resources have escaped to other cities to find a better opportunity, which has hampered the development of high-tech industries in the region and further slowed down the advanced industrial structure.*

*The analysis concludes that the three northeastern provinces should undergo fundamental reforms in terms of industrial structure and corporate governance structure, under the background of the strengthening of CHINA's supply-side reforms. First, in the aspect of industrial structure, the industrial structure should be diversified and the industrial structure should be upgraded. And, through improving the corporate governance structure, the efficiency of the local economy should be improved by converting the less efficient state economy into a more efficient private economy. It is necessary to establish local preference policies that can attract core human resources while solving the problems of industrial structure and corporate governance structure.*

**[Keywords]** *Crisis, Three Northeastern Provinces in China, Industry Structure, Corporate Governance Structure, Human Resources*

## 1. Introduction

Due to the construction of New China in

1949, the friendly policy to the Soviet Union and the industrial aid of the Soviet Union, the

Chinese central government during the planned economy period of China has focused on the three northeastern provinces adjacent to the Soviet Union, and the investment in the three provinces in the northeast led the three provinces to take a leading position in the Chinese economy. This was due to the relatively good industrial infrastructure in the Northeast region and its proximity to the Soviet Union. During the China's 1st and 2nd Five-Year Plan (1953-1962), the Chinese government implemented the priority development policy for heavy industries, and the Northeast region quickly became the base of the heavy and chemical industry. At that time, the production of automobiles, petroleum and coal in the three northeastern provinces ranked first in the nation, power plant facilities accounted for one-third of the nation, smelting facilities for one-quarter of the nation, number of automobiles for one-quarter of the nation, and industrial machinery production for one-third of the nation[1].

Since the reform and opening in 1978, the economic growth rate of the three provinces has fallen sharply, and it has come to a situation where there is a lack of renewed interest in industrial development. Therefore, in 2003, the Chinese government issued a proposal on the <Opinion on the Promotion Strategy of the Rural Industrial Zone in the Northeast Region>, under the support of the Chinese government's promotion strategy, the economy of the three provinces of Northeast China in 2007-2010 has recorded double-digit growth steadily, contributing to the economic development of China. However, since 2013, the Northeast economy has been at the end of the economic growth rate when compared

with other provinces. This article explores the factors that led to the CRISIS of the three northeast provinces through the analysis of the current economic CRISIS of the three northeastern provinces and seeks a political countermeasure for it.

## 2. Economic Status of Three Northeastern Provinces of China

### 2.1. GDP

As the global economy and the economic situation in China have become increasingly unstable, the economy of the three northeastern provinces is also showing a slow growth trend, and the three provincial governments have taken steps to maintain growth, but they have not been able to stop the decline in economic growth. When you look at the economy of the three northeastern provinces, as shown in <Table 1>, the GDP growth rates of the three provinces of Liaoning, Jilin and Heilongjiang are still falling to -2.5%, 6.9% and 6.1% respectively in 2016, and the GDP growth rate of the three provinces is located at the bottom of all the provinces. Among them, the ranking of Liaoning Province is the last in the whole country. At the same time, the share of total GDP in the three northeastern provinces has maintained to account for 9 to 10% of the national GDP before the subprime CRISIS in 2007, but fell to 7.03% in 2016. In addition, at the beginning of China's 12th Five-Year Plan (2011-2015), the GDP growth rate of the three provinces in the northeast was higher than the national average overall. In particular, the GDP growth rate of the three provinces in 2011 was 3 percent higher than the nationwide GDP growth rate.

**Table 1.** GDP growth rate of the three northeastern provinces[2].

	2000	2005	2010	2011	2012	2013	2014	2015	2016
Liaoning	8.9	12.7	14.2	12.2	9.6	8.7	5.8	3.0	-2.5
Jilin	9.2	12.1	13.8	13.8	12.0	8.3	6.5	6.3	6.9
Heilongjiang	8.2	11.6	12.7	12.3	10.0	7.9	5.6	5.7	6.1
Nationwide	8.5	11.4	10.6	9.5	7.9	7.8	7.3	6.9	6.7

## 2.2. Industrial value added

As can be seen in <Table 2>, the growth rate of the industrial value added in the three provinces in the northeast proved to be negative growth in 2015. The growth rate of the industrial value added in the three provinces of Liaoning, Jilin, and Heilongjiang was -11.0%, -4.9% and -15.3%, respectively, which was

much lower than the national average of 1.1%. In particular, the provinces of Liaoning and Heilongjiang are already far from reasonable tolerance zone. As a result, we can see that the overall economic situation of the three provinces in Northeast China is in a very serious situation.

**Table 2.** Industrial value added growth rate of the three northeastern provinces[2].

	1995	2000	2005	2010	2011	2012	2013	2014	2015
Liaoning	11.1	17.8	23.2	26.9	21.7	8.5	7.8	1.2	-11.0
Jilin	16.7	18.7	19.4	28.6	25.2	13.5	8.1	6.5	-4.9
Heilongjiang	24.2	18.9	-4.2	29.8	21.6	-6.5	-2.9	-6.0	-15.3
Nationwide	28.0	11.8	18.5	19.6	18.2	7.1	6.4	5.2	1.1

## 2.3. Fixed asset investment

When looking at the rate of increase of the fixed asset investment of the three northeastern provinces, as shown in <Table 3>, Liaoning is -27.6%, Jilin is 12.0% and Heilongjiang is 3.6%, calculated based on the amount of fixed asset investment in 2015. Among them, Liaoning and Heilongjiang are lower than the national average of 8.3%,

which means that the fixed assets investment of the three northeastern provinces is very low. In particular, Liaoning's fixed assets investment has been negative growth for two consecutive years, and Heilongjiang has been showing a slow growth trend for two consecutive years, indicating a significant fixed asset investment trend.

**Table 3.** Fixed asset investment growth rate of the three northeastern provinces[2].

	1995	2000	2005	2010	2011	2012	2013	2014	2015
Liaoning	-0.3	13.2	40.9	30.5	10.5	23.2	15.0	-1.5	-27.6
Jilin	13.0	20.7	48.9	22.8	-5.45	27.8	4.9	13.6	12.0
Heilongjiang	20.3	10.8	21.4	35.5	9.7	29.7	18.1	-14.2	3.6
Nationwide	29.7	9.3	11.8	17.0	3.3	9.6	12.0	1.1	8.3

## 3. Causes of Economic CRISIS in the Three Northeastern Provinces of China

### 3.1. Industrial structure

The portion of heavy industry and agriculture are high. The major industries of the

three provinces are heavy industry and agriculture, which was established during the planned economy period. Industrial policy, human resources, capital, etc. are biased toward heavy industry and agriculture. In the 21st century, the Chinese government has implemented a strategy of promoting the Northeast Underdeveloped Industrial Area,

but it has not been able to realize the timely advancement of the industrial structure due to the restriction of the traditional economy[3]. Support for underdeveloped industrial areas is limited to industry, and emerging strategic industries and service industries are subordinate to or dependent on the industry[4]. The role of the service industry in the economic development, particularly the role in the employment and technology development in the service sector has not been sufficiently demonstrated in the three northeastern provinces. As a result, compared to other provinces in China, the proportion of the industry in the economy of the three northeastern provinces is high in the long term and the service industry is relatively low.

Looking at the GDP share of the industrial growth by industry in each province in 2015, the proportion of Liaoning's primary, secondary, and tertiary industries in each regional GDP accounted for 8.3%, 45.5%, and 46.2%, respectively, in Jilin with 11.4%, 49.8%, 38.8% and in Heilongjiang with 17.5%, 31.8%, 50.7% respectively. It is easy to see that the industrial structural problems of the three northeastern provinces are very serious, the share of secondary industry, that is industry, of Liaoning and Jilin, in regional GDP, is higher than the national average of 40.9%. In addition, the proportion of the primary industry in the three provinces of the northeast is strangely high compared to the share of it in the latter stage of industrialization of other advanced countries. In particular, Heilongjiang's primary industry accounted for 17.5% of regional GDP, which is significantly higher than the national average of 8.8%[5].

As the global economic downturn and the overall industrial oversupply problem in China's economy become more serious, the three provinces of the Northeast have relatively good industrial infrastructure and abundant resources, but the problems of the industrial structural rigidity and the relatively underdeveloped heavy industries of the three provinces of Northeast China force to take more time for the technology industry to become a major industry by replacing heavy industry.

### 3.2. Corporate governance structure

The proportion of state-owned enterprises is very high. The main industry of the three northeastern provinces is characterized by nationalization and protectionism with heavy industry and agriculture. That is, the state-run economy takes a leading position, and the development of the private economy gets relatively behind. This can be confirmed mainly by the following three factors. First, the share of the private economy in regional GDP is very low. In particular, the three provinces of Northeast China are the first in the nation to implement the planned economy and the latest to abandon the planned economy, and even after departing from the planned economic system, the ratio of state-owned enterprises in the three provinces of Northeast China is higher than the national average. In 2014, the share of private economy in regional GDP of Liaoning, Jilin, and Heilongjiang accounted for 55%, 51% and 53% of the GDP, respectively, which is lower than the national average of 65%[6]. Second, the efficiency of state-owned enterprises is low. In 2014, Liaoning's state-owned corporate assets accounted for 43.8% of the total assets of industrial enterprises in the region, but the operating profit was only 7.2%. Apart from the automobile and machinery industries, Jilin's ten largest industries led by the state-owned economy, the profit rates of other industries were below the national average of state-owned enterprises. Among the ten largest industries in the state-owned economy of Heilongjiang, except for petroleum and natural gas mining, the profit of other industries was lower than the average profit rate in the region and also lower than the average level of state-owned enterprises[7].

Lack of R&D capability. In terms of R&D investment in 2014, Liaoning's R&D investment accounted for 1.74%, Jilin 0.9% and Heilongjiang 1.1%, respectively, below the national average of 2.8%. According to the number of R&D institutes in 2014, there are more than 27 thousand industrial enterprises in the three northeastern provinces, R&D institutes are only 3.57%, which is far behind the national average of 8.07%. In addition, considering the number of patents used as innovation indicators, the proportion of patents acquired by the three provinces in Northeast



China in 2014 was only 4% of the total. The high-tech industry's contribution to the economy was 6.5 percent, which is lower than the national average by 13%.

### 3.3. Element resources

Decline of total population in the region. The urbanization ratio in the Northeast region is high and the birth control is relatively well maintained. However, the natural population growth rate of the three provinces in Northeast China was lower than the national average in 2010-2015, in particular, the population of Liaoning recorded negative growth. Looking at the natural population growth rate of the three northeastern provinces, it is -0.42‰ in Liaoning, 1.58 ‰ in Jilin and 0.78 ‰ in Heilongjiang in 2015, which is significantly lower than the national average of 5.21 ‰. A sharp decline in the total size of the three provinces of Northeast China can cause problems in the supply of effective labor force.

Local population loss is serious. In terms of population economics, the population outflow of one area is closely related to the decline of the economy. According to the 6th census data of 2010, the outflow population of the three northeastern provinces was about 4 million, the influx population is about 2.2 million, so the net outflow of population is about 1.8 million, and the outflow population is mostly young people[8]. Due to the lack of employment of state-owned enterprises and the recession of the private economy, the population outflow is caused by overcapacity of the labor force in the three northeastern provinces, and more young people are moving to other cities for jobs. In particular, innovative talent and high-tech talent both at home and abroad are not attracted to the employment environment of the three provinces. In addition, local talent is also leaking out to other regions, and companies and research institutes are lacking core personnel[9].

Local population aging problem. According to the 6th national census data of 2010, birth rates of Liaoning, Jilin and Heilongjiang are 1.0, 1.03, and 1.03, respectively, which is far below the national average of 1.53. On the

contrary, the proportion of the elderly population of the three provinces in the northeast is much higher than the national average. Strict birth control policies and low birth rates turn the population structure into an inverted pyramid shape, negatively affecting the long-term development of the local economy.

## 4. Policy Suggestions

### 4.1. Industrial structural aspect

Diversification of industrial structure. Due to the special history of development, the three northeastern provinces have a very high proportion of heavy industries in the industrial structure. However, from the viewpoint of Petty-Clark's industrial structure change rules, it is difficult to maintain a heavy industry-led development strategy when entering the latter stage of industrialization. Especially in the case of advanced industrialized countries, various side effects such as resource bottleneck, environmental pollution, and industrial overgrowth appeared in the latter stage of industrialization. The governments of the three provinces should recognize that the labor-intensive, element-based heavy industry development strategy is unsustainable, and based on the existing industrial infrastructure, should make the industry more advanced by focusing on the precision processing industry so that it can show the advantage of the existing industry as much as possible[10]. At the same time, the governments of the three provinces need to strengthen investment in nurturing emerging and high-tech industries to find a long-term sustainable growth engine of the three northeastern provinces.

In fact, supply-side reform has taken various measures in response to the industrial oversupply of heavy and chemical industries, as a result, the heavy industry, which is the main industry of the three provinces in Northeast China, is in CRISIS and reforms in the absence of emerging industries is hitting the local economy. Therefore, it is necessary to cultivate high-tech industry and link with existing industry to pioneer new industry and new

market, to increase value of traditional industry, secure competitive advantage, and bring new vitality.

#### 4.2. Corporate governance structure

Another focus of supply-side reforms proposed by the Chinese government in 2015 is the reform of state-owned enterprises[11]. The three provinces of Northeast China have a very high proportion of the state-owned economy, and reforms on state-owned enterprises temporarily hamper the development of local economies. In particular, the level of marketization of the three northeastern provinces is lower than in other regions, the private economy has not developed, and the autonomy of social capital is not high. As a solution to this, reform of the mixed ownership system should be implemented, and the government should actively encourage the development of the private economy, encourage private enterprises to provide active financing and create a favorable investment environment, and stimulate the economy of the three northeastern provinces[12].

In the aspect of the enterprise innovation system, the three provinces of Northeast China should improve the innovation ecosystem, in particular the labor-intensive, capital-intensive development mode into a knowledge- and technology-intensive development mode. In addition, innovation-led development methods should be established to increase the spill-over effect of innovation. The three provincial governments in the Northeast shall actively promote policy and support for creating an environment favorable to innovation and entrepreneurship, strengthening the protection of intellectual property rights, and encouraging the enhancement of technical personnel innovation.

#### 4.3. Element resources

In recent years, the three provinces of Northeast China have shown a relatively serious population change trend, in particular, problems such as a decline in the size of the total population, aging population, and population outflow are serious[13]. The loss of talents can be prevented only by creating a

better environment through full-scale deepening reforms. In order to attract talented people, the three northeastern provinces should establish preferential treatment policies such as welfare for attracting special talents so that they can contribute to the economic development of the three provinces in the Northeast. In addition, it is necessary to establish income distribution system of specific high-level personnel such as providing incentives for researchers and management personnel to universities, research institutes and state-owned enterprises. In addition, policy support should be given to the creation of a business environment necessary for innovation start-up, so that university students and research personnel can easily participate in innovation and start-up.

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## Capable Guardianship and CRISIS of Identity Theft in the United States: Expanding Cyber-Routine Activities Theory

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### Abstract

*Identity theft victimization is a pervasive issue that affected 17.6 million people in the United States in 2014. In recent years, criminals have leveraged an expanding field of technologies, tactics, and various systems to commit identity theft. According to the Department of Justice, 7% of all Americans ages 16 and older were victimized. This 7% accounted for an estimated \$50 billion in losses in 2016.*

*Routine activities theory is often used as a theoretical lens and is frequently considered in conjunction with victim's online profiles and routine activities. Routine activities theory states that crime is more likely to occur when these three elements are present: a motivated offender, suitable targets, and lack of available guardianship. Various studies have focused on the measurements of victim's online exposure to motivated offenders, online proximity to motivated offenders, online target suitability, online self-guardianship (target hardening), and demographic characteristics.*

*The purpose of this study was to empirically examine identity theft victimization in the United States through the lens of cyber-routine activities theory. A subsample of 84,823 respondents from a 2014 National Crime Victimization Survey was analyzed. The current study provided a more concise measurement on capable self-guardianship. Specifically, the researchers looked at two types of self-guardianship, online and offline self-guardianship. Online self-guardianship was defined as a protective behavior or online tool that could help potential victims secure themselves from perpetrators. These include but are not limited to changing passwords, firewalls, and antivirus programs. In accordance with routine activity theory, offline self-guardianship was defined as protective behavior or target hardening in the physical world. These protective measures served to prevent conventional types of crimes in both the physical world and cyberspace.*

*In an attempt to address the gaps in the literature regarding a concise measurement of self-guardianship, the following hypotheses were evaluated in the present study: 1) individuals who have a higher level of online self-guardianships (e.g. changing passwords or using security software) are less likely to be victimized by identity theft; 2) individuals who have a higher level of offline self-guardianships (e.g. checking credit report or statement) are less likely to be victimized by identity theft. The findings indicated that online and offline self-guardianship was statistically significant effect on the reduction of identity theft victimization. Lastly, the study concluded with a discussion of the policy implications and a discussion of limitations of the current research.*

**[Keywords]** *Capable Guardianship, Crisis of Identity Theft, Cyber-Routine Activities Theory, National Crime Victimization, Binary Logistic Regression*

## 1. Introduction

Identity theft is defined as an act in which a perpetrator steals personal identifying information with the intention of fraudulent activity[1][2]. While this list is not exhaustive,

some examples of personal identifying information include an individual's name, social security number, address, taxpayer identification number, passport number, date of birth, driver's license information, and even

biometric information such as a fingerprint[1][3].

The methods used to obtain this personal information can require minimal use of technology such as dumpster diving and purse/wallet snatching. Methods can also be very technology dependent such as skimming programs/devices and pretext calling[3][4]. Skimming programs capture the strip information on credit and debit cards and use a program to re-encode this information onto other blank cards that are identical to the victims. Pretext calling occurs when offenders contact potential victims with fake scenarios in where they require personal information, such as posing as a bank or the Internal Revenue Service(IRS)[4].

Identity theft victimization is a pervasive issue of cybercrime in the United States. Due to the advancement of cutting-edge technologies(e.g. Internet, computer penetration testing software, and social engineering techniques) and online banking systems, criminals can easily leverage these technologies and systems to commit identity theft. Furthermore, criminals can utilize personal information obtained by identity theft to commit further crimes. According to the U.S. Department of Justice, 7% of all American residents age 16 or older, approximately an estimated 17.6 million persons were involved in identity theft-related victimization [5]. Losses associated with identity theft have been persistent from the late 1990s, with costs amounting to \$745 million in 1997[1]. Technological innovations have only enhanced these losses, with the Identity Theft and Scam Prevention Services(ITSPS) reporting that 2016 has experienced approximately \$50 billion in losses in the United States [6].

Although identity theft has become a very controversial issue, few empirical studies have been conducted to investigate major causal factors of identity theft victimization. Thus, the current study was conducted to identify the relationship between victim's self-guardianship and identity theft victimization to guide policy makers and law enforcements in the formulation of strategic prevention action.

## **2. Routine Activities Theory and Cyber-Routine Activities Theory**

Cohen and Felson claimed that routine activities theory could explain why crimes occurred[6]. Traditional Cohen and Felson's routine activities theory consists of three major tenets: (a)motivated offenders, (b) suitable targets, and (c)capable guardianship[6][7].

Hindelang et al. proposed lifestyle exposure theory, which mainly focuses on the victims' daily social interactions, rather than concentrating on the characteristics of individual offenders or individual causal variables[8]. Hindelang et al. found that individual's vocational and leisure activities are directly associated with crime victimization[8].

These theoretical frameworks are essential to facilitate understanding of this new crime phenomenon. In a broad sense, Choi developed cyber-routine activities theory to assess computer-crime victimization, reflecting both traditional routine activities theory and lifestyle exposure theory[7][9][10]. Choi's cyber-routine activities theory consist of four tenets: (a)motivated cybercriminal, (b)suitable target, (c)online capable guardianship, and (d)online lifestyle[10][11]. His theory provides an explanation of crime in the virtual world. Most importantly, his conceptual model posits that online capable guardianship and online lifestyle directly influence computer-crime victimization. Recently, Choi has empirically assessed the computer-crime victimization through measuring online capable guardianship.

## **3. Stages of Victimization**

In accordance with Newman & McNally, we identify three different stages of identity theft[12]. During the first stage of acquisition, personal information is obtained. Stage two incurs the use of the information, either for financial gain or to avoid detection from law enforcement or other entities. This stage varies in length for participants, as some victims suffer from a process called breeding. Breeding entails using stolen information to open multiple accounts and acquire other identity-related documents such as driver's licenses,



passports, and visas[12]. Stage three is the process of detecting that personal information was stolen and is known as discovery. The duration of stage three can vary from a period of a few days to several years. Links have been found that elude to losses being larger the longer the discovery period takes place. Also, it is worth noting that the elderly and less educated are more likely to have longer discovery periods[3].

#### **4. Research on Routine Activities and Identity Theft Victimization**

The work of Reyns and Henson represents the most plausible research on identity theft victimization and routine activities[13][14]. They examined the correlation between victims' online routine activities and their online identity theft victimization. Reyns and Henson found that specific routine activities directly impact the likelihood of identity theft victimization[13][14]. Copes, Kerley, Huff, and Kane explored demographic characteristics, risky activities, and internet usage for identity theft victims[2]. This exploratory study determined that: 1)the typical victim of identity theft was white, female, and between the ages of 35 and 54, 2)the level of their risky behavior was not higher than other citizens', and 3)their internet usage was identical to average Americans.

Reyns[13], Reyns and Henson[14], Copes et al.[2] focused on measuring victim's online routine activities and profiles such as online exposure to motivated offenders, online proximity to motivated offenders, online target suitability, online self-guardianship(target hardening), and demographic characteristics[2][13][14]. However, unlike the works of Reyns, Reyns and Henson, Copes et al., the current study is poised to focus on the measurement of capable self-guardianship. At the informal(personal behavior) level, there are two types of self-guardianship: online and offline self-guardianship[8][9][11]. Drawing from Choi's[10] cyber-routine activities theory, online self-guardianship is defined as a protective behavior or online tool that could help potential victims secure themselves

from perpetrators, including changing passwords, firewalls, and antivirus programs[7][10][11][14][15]. Also, along with cyber-routine activities theory, offline self-guardianship is defined as a protective behavior or target hardening in both the physical world and cyberspace[10][11][16][17]. Examples of this include checking credit reports or statements. To address the gaps in the literature regarding a concise measurement of self-guardianship, the following hypotheses are evaluated in the present study:

**Hypothesis 1.** Individuals who have a higher level of online self-guardianships(e.g. changing passwords or using security software) are less likely to be victimized by identity theft.

**Hypothesis 2.** Individuals who have a higher level of offline self-guardianships(e.g. checking credit report or statement) are less likely to be victimized by identity theft.

### **5. Methods**

#### **5.1. Data**

This study used data derived from the National Crime Victimization Survey: Identity Theft Supplement, estimated by the Bureau of Justice Statistics. Each household member 16 years or older were asked to participate in a computer-assisted personal interview and a computer-assisted telephone interview from January through June 2014. The Identity Theft Supplement(ITS) response rate was 90.6 percent. Data from a subsample of 84,823 respondents for ITS were analyzed.

#### **5.2. Measures**

##### **5.2.1. Dependent variables**

Three survey items were used to create a measure of identity theft victimization. These items in ITS were dichotomously coded(0 = no, 1 = yes) to measure identity theft victimization. Respondents were asked "whether anyone misused existing checking, savings, debit, and ATM", "whether anyone misused existing credit card", and "whether anyone misused another type of existing account."

### 5.2.2. Independent variables

There are two independent variables used in our analysis. The first is a measure of online self-guardianship (Cronbach's Alpha .655). Respondents were asked "whether they changed passwords on financial accounts to avoid identity theft", "whether they changed passwords in response to the misuse of their personal information", "whether they used security software in response to the misuse of their personal information." The second is a measure of offline self-guardianship (Cronbach's Alpha .464). Respondents

are asked "whether they checked credit report to avoid identity theft", "whether they checked credit report in response to the misuse of their personal information", "whether they checked statements of unfamiliar charges in response to the misuse of their personal information".

### 5.2.3. Control variables

Five sociodemographic variables were included in the analyses: age, sex, race, marital status, and educational attainment. Descriptive statistics for variables used in the current study are provided in <Table 1>.

**Table 1.** Means, standard deviations, and definitions for the variables.

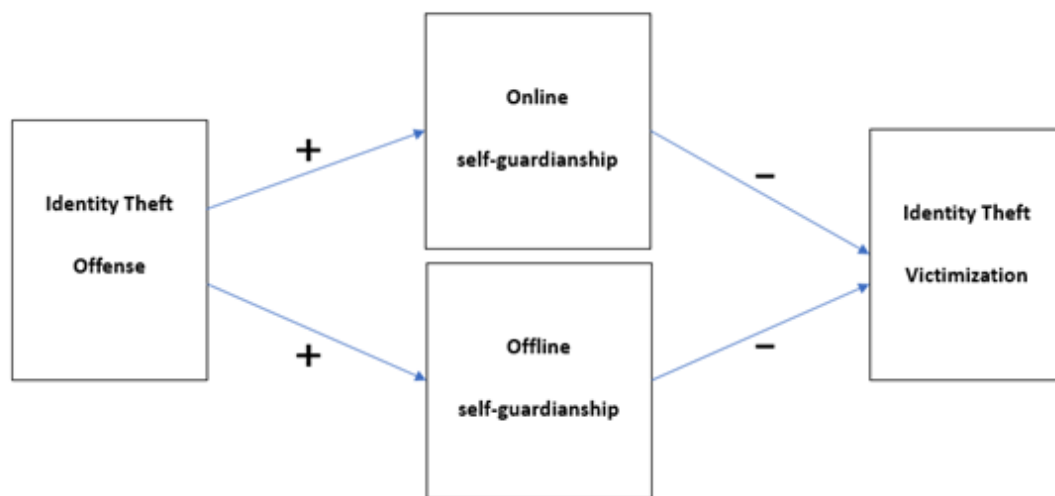
	Mean	Std. Dev.	Definition
DV Identity theft victim Online self-guardianship	.0678	.25147	Coded 1 if victimized, 0 if not victimized
Changing password to avoid ID	2.42	8.441	Coded 1 if changed, 0 if not changed
Changing password for info	1.94	1.695	Coded 1 if changed, 0 if not changed
Using security software Offline self-guardianship	1.97	.559	Coded 1 if used, 0 if not used
Checking credit report to avoid ID	2.16	7.334	Coded 1 if checked, 0 if not checked
Checking credit report for info	1.95	.929	Coded 1 if checked, 0 if not checked
Checking statements of unfamiliar Individual characteristics	1.96	.529	Coded 1 if checked, 0 if not checked
Age	47.54	18.545	Age of victim
Sex	.4773	.49949	Coded 1 if male, 0 if female
Race	.1832	.38683	Coded 1 if other, 0 if white
Marital status	.5456	.49792	Coded 1 if married, 0 if not married
Education	2.5996	.71368	Coded 1 if elementary, 2 if high-school, 3 if college, 4 if above master

## 6. Analytic Strategy

Prior to modeling the relationships between guardianships and identity theft victimizations, the possibilities of multicollinearity among the predictor variables were explored. Tolerance and variance inflation factor statistics demonstrate that multicollinearity is not problematic to execute the current study. Binary Logistic Regression is the proper

statistical technique for examining the effects of self-guardianship behaviors on the likelihood of identity theft victimization, since the dependent measure data were dichotomous[14][18]. As a result, a binary logistic regression model was estimated to investigate the effects of the independent variables(self-guardianships) on the dependent variable(identity theft victimization).

**Figure 1.** Capable guardianship and identity theft victimization.



## 7. Results

As <Table 2> demonstrates, the three measures included in the regression model are significant predictors of identity theft victimization. Regarding online self-guardianship, one of the three online protective behaviors produced negative and statistically significant effects on the likelihood of identity theft victimization, including changing a password in response to the misuse of their personal information. The suggested model indicates that individuals who changed their password in response to the misuse of their personal information are 13% less likely to experience identity theft victimization( $b = -1.973$  and  $\text{Exp}(B) = .139$  with  $p < .001$ ). In contrast, both a)changing a password to avoid identity theft and b)using security software in

response to the misuse of their personal information were not statistically significant.

With the offline self-guardianship, two of the three measures produced negative and significant effects on the likelihood of experiencing identity theft victimization. Individuals who checked credit report in response to the misuse of personal information were 67% less likely to experience identity theft victimization( $b = -.396$  and  $\text{Exp}(B) = .673$  with  $p < .05$ ). Respondents who checked statements of unfamiliar charges in response to the misuse of personal information were 62% less likely to experience identity theft victimization( $b = -.465$  and  $\text{Exp}(B) = .628$  with  $p < .05$ ). However, checking credit reports to avoid

identity theft was not significantly related to identity theft victimization.

With respect to the control variables, one of the five measures indicated positive and

significant effects on the likelihood of identity theft victimization. The findings suggest that individuals with higher educational attainment are 34% more likely to experience identity theft victimization ( $b = .292$  and  $\text{Exp}(B) = 1.340$  with  $p < .01$ ).

**Table 2.** Binary logistic regression model for identity theft victimization.

Variables	Coefficient(B)	Standard error	Exp(B)
Online self-guardianship			
Changing password to avoid ID	-.776	4039.415	.452
Changing password for info	-1.980***	.161	.138
Using security software	.266	.211	1.304
Offline self-guardianship			
Checking credit report to avoid ID	3.246	4039.415	25.683
Checking credit report for info	-.392*	.177	.675
Checking statements unfamiliar	-.470*	.200	.625
Individual characteristics			
Age	.000	.004	1.000
Sex	-.068	.105	.935
Race	-.208	.166	.812
Marital status	.066	.118	1.068
Education	.292**	.086	1.340
Constant	-.597	.354	.550
-2 log likelihood	2481.881 <sup>a</sup>		

Note: \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

## 8. Discussion and Limitations

Similar to previous research by Reyns and Henson, the current study found that online self-guardianship reduced the likelihood of identity theft victimization[14]. In particular, respondents who changed their password in response to the misuse of their personal information were less likely to be victimized. In

contrast, changing a password to avoid identity theft and using security software did not influence the likelihood of identity theft victimization.

Regarding offline self-guardianship against identity theft, the present study suggests that individuals who regularly checked their credit report in response to the misuse of personal

information and carefully checked statements of unfamiliar charges in response to the misuse of personal information reduced the likelihood of identity theft victimization. However, simply checking their credit report to avoid identity theft was not associated with the reduction of the likelihood of identity theft victimization.

The current study contributes to the criminological literatures, proving both online and offline guardianship are key components to preventing and mitigating the effects of identity theft. When online and offline guardianship factors are simultaneously employed to deal with identity theft victimization, it enforces the required level of capable guardianship necessary to respond to the misuse of personal information. In other words, victimization and people's online and offline behaviors can substantially affect the likelihood of identity theft victimization and repeat victimization. Overall, the findings of this empirical study confirm that both online and offline guardianship can contribute to the development of prevention and damage mitigation strategies.

Building a guardianship awareness program can provide an effective prevention strategy. Through implementing guardianship awareness programs, citizens can effectively protect themselves from identity theft. Currently, the Federal Trade Commission[12] implements identity theft protection programs, which help U.S. citizens be aware of how to prevent identity theft victimization and how to personally recover from the victimization of identity theft[9][19]. Public sector, private sector, and academia are all important stakeholders in preventing identity theft. These stakeholders can respectively execute a guardianship awareness program against identity theft. Thus, these awareness programs from FTC could expand to private, academia, and other public sectors to educate potential victims of identity theft. For example, coupled with FTC's protection programs, schools could enhance the students' level of online and offline self-guardianship against identity theft via an application of a school-based guardianship awareness program.

The limitations of this study reside in our utilization of NCVS data. While an imperfect tool, the NCVS is a great asset to examine the measurements of victimization in the cyber realm that are not consistently captured through other official reporting outlets. However, using NCVS data does not allow us to probe deeper to see how frequently an individual must attempt to change their password or check statements for it to be represented as a salient relationship. On the surface, due to how the data was collected(dichotomously), victimization was presented to be the only salient variable for reducing victimization. However, this is misleading, as individuals that experienced a reduction in victimization either changed their passwords or carefully check statements that contained unfamiliar charges. This misrepresentation of causality can misguide some to perceive prior victimization as the only important factor in reducing and preventing victimization.

## 9. Conclusion

In conclusion, the present study leads to some substantial findings, despite the existing limitations. The results of the study indicate that both online and offline self-guardianship are imperative to fight against identity theft perpetrators. In short, to effectively protect ourselves from identity theft we need to implement an adequate level of online and offline self-guardianship.

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## Analysis and Suggestions on CRISIS Education in South KOREAN Elementary School

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### Abstract

*An elementary school is a place where a group of youths with lively physical activities are active and are always exposed to the risks of accident, therefore, it is required for the elementary school students who are lacking in the ability, knowledge and judgment in crisis responses to have crisis education. The crisis situation for South Korean children and adolescents is very high among OECD countries with an average of 25.6 deaths in children and adolescents in the past between 1991 and 1995. From 2009 to 2010, the mortality rate of per 100,000 children and adolescents was 9.7 persons(traffic accident), 7.1 persons(murder), 5.1 persons(suicide), 1.8 persons(drowning), 1.7 persons(falls), 0.5 persons(fire accident), and 0.1 persons(poisoning accidents).*

*Crisis Education in South Korean Elementary School is supporting disaster control, life safety, traffic safety, violence and personal safety, drug and harmful material safety, internet addiction and first aid in relation to safety related matters by greatly increasing the safety budget in 2016.*

*However, the safety education conducted at South Korean elementary schools is often insufficient for students to make them cope with and overcome crises. Even if elementary schools have to carry out every year over 44 hours of safety education such as six hours of disaster preparedness education, missing and abducted person prevention and traffic safety, they are replaced with only 2 ~ 6 hours of disaster training for the reason that there is no specific guidance. As a result of the 'Survey on Children's Safety Education' conducted from October to November last year by the Ministry of Education and the Ministry of Security Administration and so on in terms of 21,540 teachers from nationwide kindergartens and elementary schools, 12.9% of elementary school teachers and 30.6% of kindergartens teachers observed the mandatory time for safety education, however, most of them have been replaced by audiovisual materials, and only 18.1% of elementary school teachers and 28.1% of kindergarten teachers had participatory education. The participatory method for the safety education for elementary school students, based on the assumption of an actual emergency situation, was more effective, however, most of delivering methods were to render the relevant content as lectures.*

*Therefore, the crisis education for elementary school in South Korea needs to be systematically developed as follows.*

- 1)It is necessary to conduct participatory education on the contents and the method of crisis education at schools.*
- 2)It is necessary to expand the professional workforce in charge of crisis education at schools.*
- 3)It is necessary to learn crisis education by experience in order to act it out in case of a crisis by implementing crisis education periodically by systemizing it according to the levels of students.*
- 4)It is necessary to provide various crisis response experience sites.*

*Therefore, this study aimed to be helpful in keeping oneself from dangers by learning personal methods of crisis management response and ability by the opening of crisis education curriculum so that students may understand proper crisis management and learn proper responsibility through the curriculum of South Korean elementary school.*

**[Keywords]** Elementary School, Crisis, Management, Education, Risk

## 1. Introduction

Recently, school crisis education has become a major concern for overall society as a result of increased safety accidents both inside and outside schools. Crisis education refers to an education that is carried out to shift the behaviors and attitudes of individuals into a desirable direction in order to ensure the safety of others as well as theirs from various risks that may arise in daily life[1]. Especially, elementary schools are the places where a group of youths with lively physical activities are active and are always exposed to the risk of accidents, therefore, it is further required for the elementary school students who are lacking in the ability, knowledge and judgment in crisis responses to have crisis education[2].

It is very important to secure the safety of school life in order for students to enjoy exciting and enjoyable school life. School safety accidents may leave physical and psychological injuries to the victimized students, and their parents may also suffer greatly psychologically and economically. Therefore, it is necessary to thoroughly implement the school crisis education that is systematically dealing with the knowledge and situational coping methods etc. about the crisis at schools so as to prevent the accidents and to develop the ability to cope with the crisis[3]. Among previous studies on South Korean elementary school crisis education, the 'Seoul School of Education's School Safety Education Resource Book' reported that 'school safety refers to a safety education that focuses on safety education such as safety training, checking school facilities and environment maintenance and so on, and 'safety activities' per school unit in which the functions for each of three areas of disaster prevention are promoted with organic relationship to minimize disasters and to prevent recurrence of accidents'[4]. Accordingly, this paper aimed to analyze the actual situation of elementary school crisis education in South Korea, examine the necessity, purpose and direction of elementary school crisis education, and present the direction of crisis education in elementary schools in South Korea.

## 2. Current Status of Crisis

In South Korea, the mortality rate of children and youth safety accidents from 1991 to 1995 reached an average of 25.6, which was relatively very high among the Organization for Economic Cooperation and Development (OECD) countries. According to the 2005 criteria, the death rate of children due to injuries and accidents among OECD countries was 8.7 per 100,000 persons, coming in third, after Mexico(13.6) and the United States(9.2). This is higher than the OECD average(5.6) and 3.2 times higher than Sweden's(2.7). The causes of deaths for these children were traffic accidents(42.7%), drowning(20.0%), and murder(8.7%) in order in 2005. It showed the same order with the top three causes of death in the OECD countries, traffic accidents 39.6%, drowning 14.9%, and murder 9.7%, but its ratio was relatively high. In addition, in the case of accidents due to falling and drowning, South Korea recorded 2.5 times and 1.3 times higher scores than the OECD average[5]. According to a relatively recent survey(Gyeonggi Provincial Office of Education Safety Education Kit, 2012), the mortality rate of children and adolescents from 2009 to 2010 per 100,000 persons in order was 9.7 for traffic accidents, 7.1 for murder, 5.2 for suicide, 1.8 for drowning, 1.7 for falling, 0.5 for fire, and 0.1 for poisoning, showing the mortality rates by safety accidents reaching serious levels[6].

In developed countries, a lot of attention has been paid from early on to protect the rights and to improve the status of children and adolescents. In order to reduce the safety accidents of children and adolescents, they have been promoting safety policies for children and adolescents focusing on practice through the balanced unification in three areas such as living environment maintenance (Environment), safety regulation reinforcing and control, and safety education reinforcing (Education). Furthermore, in order to bring about international consensus on the safe social protection of children and adolescents, the UN declared through the 'International Convention on the Rights of the Child' in 1989 that children and adolescents have the right to live in safe environment and are the beings

to be protected first from crisis situations and has been encouraging the member states to implement safety measures for children and adolescents[7].

The OECD Consumer Policy Committee also adopted the "Recommendations for Safety for Children" for children and adolescents, carried out collecting data on and investigated child and youth related accidents, establishing safety standards for products and facilities for children and adolescents, crisis education, and presenting the analysis of the effectiveness of safety treatment etc. and has been recommending the member countries to comply with them[8].

### 3. Current Status of Crisis Education

In 2016, the government decided to drastically increase the safety budget to focus on building safety-related facilities and equipment, education and training, and fostering the safety industry. Therefore, the Ministry of Strategy and Finance announced on September 21 that the safety budget for next year will be increased to 1.46 trillion KRW, which is 17.9% increase from 1.24 trillion KRW this year. This is the highest level of growth in each sector, three times the growth rate of total expenditures(5.7%). In addition, the government decided to prevent safety accidents in advance by investing heavily in reinforcing school facilities and traffic facilities (roads, tunnels, railways, bridges) that are directly linked to national security with the budget increased three times[9].

This positive response by the government and the authorities can be said to come out from the constant criticism that regardless of the importance of crisis education in preparation for school safety accidents, the measures have been insufficient. Meanwhile, the Ministry of Education has decided to create the 'Standards for Seven Fields in School Safety' in preparation for various safety accidents. It announced that this standards included the safety education contents adjusted to student developmental levels per safety type from kindergarten to elementary, middle and high school and will be reflected to school

curriculums. The Ministry of Education stipulated seven fields(disaster control, living safety, traffic safety, violence and personal safety, drug and toxic substance safety and internet addiction, occupational safety and first aid) in relation to school safety[10].

These standards contain school safety education by safety type and by school level (kindergarten, primary school and secondary school) so that behavioral tips can be referred to when a crisis occurs. In addition, the ministry decided to prepare and distribute portable safety manuals to the frontline schools to effectively deal with safety accidents such as fire, earthquake, food accidents, and school violence[11].

Currently, students are receiving safety education under the regulations specified in relevant laws and regulations. For example, the 「School Health Law Article 12(safety management for students)」(Amended Dec. 14, 2007) 「Child Welfare Act Article 31(education for children's safety)」(Amended Jan., 28, 2014), 「Enforcement Decree on the Promotion of Child Safety Article 28(education on the safety of children)」(Amended on September 29, 2014), 「Act on School Safety in Injury Prevention and Compensation Article 8 (implementation of school safety education)」 are the basis for promoting school safety education. However, school safety education being implemented at schools is not sufficient enough to cope with and overcome students' crisis. For the front-line schools (kindergarten, primary schools and secondary schools), regardless of the obligation to perform over 44 hours of safety training such as six hours of disaster preparedness training in accordance with the enforcement ordinance of the Child Welfare Act, prevention of missing and abduction and traffic safety, the training has been replaced by 2 to 6 hours of disaster training with the excuse that there is no specific guidance. As a result of the 'Child Safety Education Current Status Survey' conducted by the Ministry of Education and the Ministry of Security and Public Administration etc. from October to November last year targeting 20,154 teachers in kindergartens and elementary school nationwide, only 12.9% of elementary school teachers and 30.6% of



nursery schools and kindergarten teachers were observing safety education mandatory hours. Furthermore, it was revealed that most of the hours were replaced by audiovisual materials, and only 18.1% of elementary school teachers and 28.1% of kindergarten teachers conducted participatory education. Even if the safety education methods for primary and secondary school students show high efficiency when they are implemented assuming actual risky situations, lecture style delivery method is mostly in use.

In addition, despite that there is an increasing number of school safety accidents every year because of the increase in school safety accidents every year, the proportion of health teacher placement is only 64.9%[12].

## 4. Conclusion

This study aimed to present the direction of crisis education according to the necessity and goal of elementary school crisis education by analyzing the reality of elementary school crisis education in South Korea.

1)There is a need to improve the content and type of crisis education being implemented into participatory education. In addition, since the fields where crisis education is required may be different for each student and school, it is necessary to develop textbooks and programs to carry out crisis education on a case-by-case basis.

2)The number of personnels in charge of crisis education should be increased. In order to enhance the effectiveness of crisis education at schools, it is necessary to strengthen the training of teachers who are in charge of crisis education and to find ways to train the personnels who are in charge of crisis education.

3)The crisis education suitable for the levels of students should be learned by experience by systematizing and implementing it periodically so that it can lead to acting out in case of crisis. In addition, sufficient time for crisis education should be ensured in case of an emergency in which damage to the student's body may occur.

4)Various crisis response sites should be provided. In South Korea, there are 14 disaster safety experience sites nationwide. In order to implement more effective crisis education, there should be enough experience sites to undergo and cope with crises.

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