

The 21st Asian Conference on Crisisonomy & The 1st Crisisonomy Forum  
The 14th International Conference on Crisis & Emergency Management  
[Korea, China, Japan, U.S.A., United Kingdom, Thailand, Taiwan, Australia,  
Pakistan, Bangladesh, Nepal, Mongolia, India, Chile]

# Global Crisis & Emergency Management Cooperative System for Overcoming Disasters, Pandemic, and Transnational Threats

**Date** 16 (Wed.) - 18 (Fri.) December, 2020

**Venue** Chungbuk National University, Korea

## Co-host Organizations

Asian Association for Crisisonomy (AAC)  
International Society for Crisis & Emergency Management (ISCEN)  
Crisis and Emergency Management: Theory and Praxis (CEM-TP)  
UN Disaster Risk Reduction (UNDRR)  
Asian Disaster Preparedness Center (ADPC)  
National Crisisonomy Institute (NCI), Chungbuk National University  
Korean Association for Crisis and Emergency Management (KACEM)  
Institute of System Analysis and Management, Chinese Academy of Sciences  
Managing Disaster Risk and Resilience Community, Seitoku University

## Co-managing Organizations

Loving Center for Disaster Victims  
Incheon Studies Institute, Incheon National University  
Korea Innovation Foundation  
Korea Disaster Relief Association  
Chungcheongbuk-do Council for Sustainable Development  
The Council of Green Cheongju  
Chungcheongbuk-do Disaster Safety Research Institute

## Sponsored Organizations

UN Disaster Risk Reduction (UNDRR)  
Asian Disaster Preparedness Center (ADPC)  
National Research Foundation of Korea  
Chungbuk National University (CBNU)  
LINC+(Leaders in Industry-University Cooperation), CBNU

## Support Journals

Crisisonomy, Disastronomy, Journal of Safety & Crisis Management  
Korean Review of Crisis & Emergency Management,  
Journal of Contingencies & Crisis Management

# INVITATION

Dear Global Friends!

The global society is suffering from the global COVID-19 crisis in 2020. COVID-19, a new pandemic that has never been experienced, is a challenging task for human society to respond quickly and efficiently.

COVID-19 has spread simultaneously in countries around the world with short time lag, leading to a chain of blockade measures by each country. Moreover, reports of the emergence of the COVID-19 variant virus continue to increase uncertainty. In addition, the crisis of vulnerability of the economic and social systems of the national society as well as the global society is serious.

In addition to COVID-19, the risk of the emergence of another new infectious disease or the reappearance of existing infectious disease is also of concern. In addition, there is an urgent need to prepare countermeasures for new crises in the future due to the rise of natural disasters caused by climate change and global warming, increased health damage in the environmental health sector, and the advent of the 4th Industrial Revolution.

The current COVID-19 viruses require cooperation and connectivity in various fields such as economy, diplomacy, trade, education, defense, and environment, as well as crisis and emergency management to the health and medical sector. In order to cope with pandemic in the future society, a multi-organizational cooperation and a trans-disciplinary approach are needed as well as a health care approach.

To manage the COVID-19, lots of countries have banned movement between regions, banned close, dense, and intimate contact, and implemented social distancing. A completely different way of life is required than in the past. In the past, the socio-economic system centered on social contact and face-to-face with people is rapidly transforming into a non-contact and non-face-to-face society.

Accordingly, the governments of each country, which are responsible for practically preventing and responding to the COVID-19 crisis, are making efforts to strengthen the resilience that allows residents and businesses to quickly recover from economic, social and cultural shocks. A resilient community ensures safety from various infectious disease and minimizes damage, enabling sustainable development.

AAC, ISCEM, and the academic organizations and governance organizations in the field of Crisisonomy strive to make a safe, resilient and sustainable future by overcoming the COVID-19.

The 21st Asian Conference on Crisisonomy, the 14th International Conference on Crisis & Emergency Management, and the 1st Crisisonomy Forum will be held under the theme of "Global Crisis & Emergency Management Cooperative System for Overcoming Disasters, Pandemic, and Transnational Threats."

We would like to ask for your interest and participation in the 21st ACC, the 14th ICCEM and the 1st Crisisonomy Forum held on 16th to 18th December to make the academic development of Crisisonomy and a sustainable safety society.

Due to the COVID-19, 3 academic conferences will be held in a non-face-to-face manner. The Collaboration Organizing Committee of the 21st ACC, the 14th ICCM, and the 1st Crisisonomy Forum decided to submit abstract and YouTube video (about 7 minutes) instead of attending in person. The video submitted by the participants will be broadcast on YouTube.

Participants, which are from Korea, China, Japan, U.S.A., United Kingdom, Thailand, Taiwan, Pakistan, Bangladesh, Nepal, Mongolia, India, Chile, are requested to send the title and abstract by 20th November, 2020, and the video by 30th November.

Thank you so much for your participation.

October 21, 2020

The Collaboration Organizing Committee **Jae Eun Lee, An Chen, Keiko Kitagawa, Hans Guttman, Jeong Yee Bae, Sung Kwang Yang**

The Collaboration Preparatory Committee **Ju Ho Lee, Seol A Kwon, Sang Hee Kim**

#### ● The Collaboration Organizing Committee

Dr. Jae Eun Lee (Former Chair, The 1st, 3rd, 7th, 11th, 14th ICCM, Korea)  
Dr. Jai Ho Oh (Former Chair, The 2nd ICCM, Korea)  
Dr. An Chen (Former Chair, The 4th ICCM, China)  
Dr. Norio Okada (Former Chair, The 5th ICCM, Japan)  
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Mr. Sung Kwang Yang (President, Korea Innovation Foundation)

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Mr. Minsu Kang (Chungbuk National University, Korea)  
Ms. Chaehwan Kim (Chungbuk National University, Korea)  
Ms. Hyeseon Won (Chungbuk National University, Korea)

# Program

## ■ Opening Address

Jae Eun Lee (President, AAC / Chungbuk National University, Korea)

## ■ Keynote Speech I : Safe Community, Security Challenge, Perception, and Pandemics

Talking about 'Elephant-in-the-Room' for Establishing Safe Community:  
Multi-cause Finding Approach

**Jae Eun Lee**  
(President, AAC / Chungbuk National University, Korea)

Addressing COVID-19 Safety and Security Challenges

**Hans Guttman**  
(Executive Director, ADPC, Thailand)

Promoting a Multi Sectoral Approach to Tackle Pandemics:  
The Health Scorecard

**Sanjaya Bhatia**  
(Head, UNDRR ONEA & GETI, India)

How Does Benefit-risk Perception Affect Local Acceptance:  
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**An Chen**  
(Next President, AAC / Chinese Academy of Sciences, China)

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(Co-president, AAC / Seitoku University, Japan)

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Crisis Management During and Beyond COVID-19: Role of ICT in Nepalese  
Education Context

**Gajendra Sharma**  
(Vice President, AAC / Kathmandu University, Nepal)

The Research on Mongolians' Traditional Knowledge, Rituals and  
Customs for Preventing from a(n) Plague or Infectious Disease

**Munkhbat Dashdorj**  
(Mongolian National University, Mongolia)

COVID-19 and Hatred Society

**Seol A Kwon**  
(Chungbuk National University, Korea)

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**Anne Eyre**  
(Disaster Action, United Kingdom)

New Normal Disaster and Safety Management Paradigm

**Jeong Yee Bae**  
(Inje University, Korea)

New Normal Corona Crisis Management Governance

**Sang Ok Choi**  
(Korea University, Korea)

Intermunicipal Responses to COVID19: Evidence from Chilean Local  
Governments

**Karina Arias Yurisch**  
(University of Santiago, Chile)

COVID-19 VACCINE: When will it be available to us in Korea?

**Joong-Kook Choi**  
(Chungbuk National University, Korea)

Corona 19, Strengthens Education Safety

**Sun Hee Jo**  
(Chungcheongbuk-do Office of Education, Korea)

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**Dale William Hanson**  
(James Cook University, Australia)

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**Azam Muhammad**  
(PMAS Arid Agriculture University, Rawalpindi, Pakistan)

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**Minsun Song**  
(Valdosta State University, USA)

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**Wei-Sen Li**  
(National Science and Technology Center for Disaster Reduction, Taiwan)

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**Byoung Jae Lee**  
(Korea Research Institute for Human Settlements, Korea)

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**Sang Hee Kim**  
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**Ju Ho Lee**  
(Sehan University, Korea)

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**Hyun-Soo Park**  
(The Council of Green Cheonju, Korea)

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**Eun Mi Lee**  
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**Chan-Gwon Jeong**  
(Institute for Korea Crisis Management, Korea)

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**Hyeon Cheol Moon**  
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**Jeong Ryu**  
(Seokyeong University, Korea)

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**Yong-Un Ban, Cheol-Hee Son, Young Eun Ryu**  
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**Sang-Min Lee, Byung-Tae Yoo**  
(Korea National University of Transportation, Korea)

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**Yu-Ra Choi** (Ulsan Research institute, Korea),  
**Mi-Kyung Kim** (Chungbuk National University, Korea)

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**Nemoto Masatsugu**  
(Chungbuk National University, Korea)

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| The Role of Relief Support Agency and Measures to Develop the Disaster Relief System in Goseong Fire of 2019                                     | Jong Il Na, Jung Hee Kim, Woo Ri Shin (Disaster Safety Institute, Korea Disaster Relief Association, Korea)      |

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| Development of Evidence-Based Fall Prevention Program in Yangsan City, Korea   | Min-Yeong Kwak (Kyungsung University, Korea)<br>Jeong Yee Bae (Inje University, Korea)<br>Young-Tae Kim, Jong-Kil Choi (Yangsan City Hall, Korea)                         |
| Factors Influencing Korean Consumers' Boycott Participation in the Context of COVID-19   | Eugene Song, Hyun Jung Yoo (Chungbuk National University, Korea)  |
| Development of Traffic Accident Prevention Program in Gangseo-District of Seoul Metropolitan Government, Korea : Evidence-based Approach | Jeong Yee Bae (Inje University, Korea)<br>Deoksoo Lee, Kwangseog Lee, Jaeyong Ahn, Yunjeong Ham (Gangseo-District of Seoul, Korea)<br>Hyewon Lee (Inje University, Korea) |
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## ■ National Graduate Student Academic Contest on Crisisonomy

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| Research on Communication Mechanisms in Public Crisis Management in China: Focused on Covid-19  | Yena Choi, Yuxin Du<br>(Chungbuk National University, Korea)  |
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| An Analysis of the Factors Influencing the Satisfaction of Emergency Disaster Relief Funds  | Jee Eun Kim, Lin Dong, Ke Zhang, Ganchimeg Bat-Erdene<br>(Chungbuk National University, Korea)                              |
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| Air Pollution Crisis Management Plan in Ulaanbaatar City: The Ger Areas of Ulaanbaatar City   | Ganchimeg Bat-Erdene<br>(Chungbuk National University, Korea)   |
| Psychological Disorders and Stress Behaviors in Public Crisis: Research on COVID-19 Stress Adjustment Mechanism of Korean People Based on Resilience                                  | Jin Sik Shin<br>(Incheon National University, Korea)  |
| Monitoring of Traffic Accident Hazard Areas in Chungbuk National University Affected by New Two-Wheeled Vehicles  | Seol A Kwon, Su-Min Kim, Hong-Sun Jang, Su-Hyeon Kim, Hye-Jin Jeong, Mi-Seon Noh<br>(Chungbuk National University, Korea)   |
| Application of River Flow Analysis Model to Respond for Hazardous Chemical Leakage Accidents: Comparative Analysis of HDM-2Di Model and Nays-2DH Model                                | Tae Soo Eum, Chang Geun Song<br>(Incheon National University, Korea)  |
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| Current Status of Youth in Crisis in the 4th Industrial Revolution Era: Focusing on runaway youth prostitution  | Ae Ja Kim, Eun Hee Lee (Chungbuk National University, Korea)<br>Sung Soo Byun (Chungbuk Research Institute, Korea)          |
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## ■ National Graduate Student Academic Contest on Crisisonomy

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| Research on Chinese Government's Communication in Public Crisis Management in the Era of New Media: A Case Study of COVID-19 Pandemic  | Linpei Zhai, Siyi Wang (Chungbuk National University, Korea)<br>Sung Soo Byun (Chungbuk Research Institute, Korea)                              |
| Utilization Plan of Information Network Technology for Crime Prevention: Centered on Unprovoked Injuries to Students by Outsiders  | Mengxing Xu, Shaochun Mo<br>(Chungbuk National University, Korea)<br>Sung Soo Byun (Chungbuk Research Institute, Korea)                         |
| A Study on Overcoming the COVID-19 Policy Finance Crisis through Elements of the 4th Industrial Revolution   | Jin Hwa Kim, Mun Seop Byoun<br>(Chungbuk National University, Korea)<br>Sung Soo Byun (Chungbuk Research Institute, Korea)                      |
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| Human Disasters Caused by Human Activities and A Study on the Administrative Response Policy: With Fine Dust and Chungbuk Administration   | Ran Hee Jung<br>(Chungbuk National University, Korea)   |
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| Cognitive Analysis of Infectious Disease Crisis and Epidemic Prevention System   | Gaoyuan Li<br>(Chungbuk National University, Korea)   |
| The Extinction Crisis?: Spatial Disparities in Population Aging in the Seoul Metropolitan Area   | Hee Jin Yang<br>(Incheon National University, Korea)  |
| An Empirical Analysis of Passenger Safety in Chinese Internet Reservation Cars: Focusing on Safety Management in Yantai City, Shandong Province<br>An Empirical Analysis on the Safety of Online Reservation Car and Passenger | Zihan Jiang<br>(Chungbuk National University, Korea)  |
| Crisis Management Countermeasures Adopted to Prevent the Collective Spread of COVID-19 Infection: Focused on China   | Yue Pu<br>(Chungbuk National University, China)   |
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## ■ National Graduate Student Academic Contest on Crisisonomy

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| A Study on Policy Changes after the Focus Event: Corona 19   | Dae-geun Ji<br>(Chungbuk National University, Korea)                               |
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### ※ Contact Phone

If you have any questions about the Collaboration International Conference, please contact us at the following phone number.

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# Keynote Speech I

Safe Community, Security Challenge, Perception, and Pandemics

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## Talking about ‘Elephant-in-the-Room’ for Establishing Safe Community: Multi-cause Finding Approach

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### Abstract

The purpose of this paper is to present problems that everyone knows but does not talk about to make our society safe. Government policy makers, local government heads, academic experts, working public officials, and business people are all trying to eliminate the problems that must be overcome in building a safe community. But there are problems that everyone knows but doesn't talk about, the so-called elephant-in-the-room. In terms of multi-cause finding, these problems can be presented as follows. First, it is said that the expertise and responsibility of crisis management are important, but in actual personnel administration, it is more important to promote loyal employees through rotational positions. Second, it is said that a safe society should be created, but members of the society are less willing to pay for safety costs. Third, while claiming that safety is the most important, safety is evaluated as the lowest value in real life. Fourth, the government says life is important, but does not invest to protect the lives of others (especially the poor). Fourth, rather than earning low profits through safe job performance, companies seek high profits through illegal or risk-prone activities. Fifth, politicians and bureaucrats tolerate irrational behavior and corruption, the biggest obstacles to creating a safe society.

**Key words:** elephant-in-the-room, multi-cause finding, corruption, illegal activities

## Does High Risk Mean High Loss: Evidence from Flood Disaster in Southern China

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### Abstract

Southern China has suffered from flood disasters for over sixty years, which results in tremendous socio-economic loss. With the development of economy and the improvement of disaster reduction, both the exposure and potential loss of flood disaster are increasing. However, previous studies only focus on risk assessment, few has examined the comparison of potential risk and the actual losses caused by it. To this end, a method combining entropy weight and TOPSIS based on flood data (2008 to 2018) in China's national and provincial disaster database is applied to analysis flood risk and resulting loss in southern China. By using disaster system dimensions of hazard, exposure and vulnerability, the effect of natural, economic and social factors on flood risk are also examined. Results indicate that: (1) flood risk in southern China is relatively low from 2008 to 2014 and becomes server since 2016; (2) the resulting losses of flood disasters in southern China are optimistic during most of the selected years in the study period; (3) flood risk is not always in line with the resulting loss; and (4) flood disasters in southern China are categorized into high-risk and low-loss situation, low-risk and high-loss situation, and the situation with the same level of risk and loss. To the best of our knowledge, this is the first study to assess southern China on a regional scale from both temporal and spatial perspectives, and has compensated for the lack of comparative research on flood risk and the resulting loss. In practice, our findings can protrude the priorities of flood prevention both in flood-prone areas and specific measures, which is conducive to improve the efficiency of resource allocation.

**Key words:** flood disaster, risk and loss, risk assessment, comparative analysis

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## Keynote Speech II

Shelter Condition, Infectious Disease, and COVID-19

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# Shelter Environment of Avoiding the Infectious Diseases in the Event of Complex Disasters

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## Abstract

Asian countries are at risk from various emergencies and disasters. These are natural events and man-made event. If we have strong preparations, and realistic plans, we can respond to reduce human suffering. The goal of this presentation is to give an idea of how important the timeline for evacuation is in the situation of a COVID-19 pandemic. In previous years, disaster studies are focusing on historical origins, theoretical foundations, and objectives in countermeasures. This research method is extremely important, and we have the same style of research, capturing the history of disasters. When the damage caused by a large-scale disaster is significant, we say learn from the experience. Thus, we are taking a bird's eye view of learning from experience and reconsider that concept. Here we present three cases of evacuation of a dementia group home in the event of a major flood. We also point out how "timeline" is necessary for people who are vulnerable to evacuation to evacuate earlier. In facilities such as group homes for the elderly with dementia, the number of victims differs greatly depending on whether the evacuation takes place during the daytime or at nighttime. During the night, it is difficult to evacuate all residents because there are fewer staff (one to several). A timeline is essential for minimizing victims. In addition, the myth that social welfare facilities are safe and the normalcy bias of "we don't need to evacuate" should be eliminated. Due to the unexpected COVID -19 pandemic in 2020, it became necessary to take countermeasures against infectious diseases in shelters. We propose the method of safe evacuation and sheltering to minimize the loss from disaster and COVID-19. We emphasize that there are 3 pointed out of preparedness of learn from past disaster risk management. In previous years, major disaster management system was for single-hazard approach. We have to shift for the event of complex disaster and multiple hazards, now and beyond. 2nd is continuing and enhance our sharing of ideas and information on emergency management. 3rd is the most important policy of "No one behind"

**Key words:** complex disaster, timeline, shelter environment, infectious disease

## Crisis Management During and Beyond COVID-19: Role of ICT in Nepalese Education Context

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### Abstract

The coronavirus disease 2019 (COVID-19), an infectious disease caused by severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2), was first identified in December 2019 in Wuhan, China. It spread across the world leading the World Health Organization to declare it a pandemic on 11 March 2020. As WHO confirmed human to human transmission of COVID-19 and given the high rate of international movement that happens on a daily basis from and to all countries, Nepal has not remained unaffected by the pandemic. The objectives of this paper is to highlight major impacts of COVID-19 in education sectors in Nepal and use of ICT to cope with this pandemic. Different cases and impacts of COVID-19 were taken in this study and significance of ICT have been highlighted to minimize international pandemic.

**Key words:** crisis management, COVID-19, education, ICT



# The Research on Mongolians' Traditional Knowledge, Rituals and Customs for Preventing from a(n) Plague or Infectious Disease

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## Abstract

For centuries, every nation has been preserved various preventive strategies and unique remedies from their traditional system of medicine. In this article, the traditional knowledge, culture, ritual and customs of Mongolians who have protected themselves and their families during the plague or pandemic, as well as nomadic method of personal hygiene and healthy living are highlighted. Otherwise, the significance of the paper intended to be presented to researchers in the relevant disciplines of modern science that this traditional Mongolian culture and custom have common importance to the world and humanity affected by Covid-19. It is interesting to note that some elements of this traditional Mongolian culture and behavior are similar in content and form to the guidelines and advice given by WHO and medical experts on the prevention and treatment of Covid-19 pandemic, which has spread around the world today. For example, wearing a mask regularly, having everyone's dishes, refusing to shake hands, and so on.

**Key words:** Mongols, traditional customs, rituals, plague, contagion, abstinence, greetings, color of white, cup, spoon, mouth cover, Mongol ger

## COVID-19 and Hatred Society

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### Abstract

In general, during an infectious disease epidemic, an interest in previous circulations or identities of isolated persons grows, and hatred for and exclusion of initial infected persons begin. When an infectious disease comes from the outside, the voice of hatred for and criticism of the relevant group overwhelms measures for scientific prevention of epidemics. Especially, the epidemic in a low class-concentrated area, a foreigner-concentrated area and accommodations for the mentally disabled, where lack social and economic infrastructure doubles the existing social bias. The same goes for hatreds for lower classes with specific religions, races and occupations. Regardless of the effect of epidemic preventive measures, this psychological hatred is very strong, and negatively affects a minority group by making them cover up symptoms and medical histories. In Korea, hatreds for generations, regions and races have emerged, in relation to the COVID-19 pandemic. The government has to map out a crisis management strategy to predict and control national fatigue and hatreds caused by the extended infectious disease response. Given that all the persons loathed come from the vulnerable social group during the COVID-19 pandemic, we need to put efforts into increasing human rights sensitivity.

**Key words:** COVID-19, hatred, discrimination, a sense of solidarity, human rights sensitivity, vulnerable social group

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## Keynote SpeechIII

New Normal, Response, and COVID-19 Vaccine

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## Building the ‘New Normal’: Five Key Principles for a Post-Corona Society

Anne Eyre

Disaster Action, United Kingdom

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### Abstract

The aim of this presentation is to highlight the contribution of a psychosocial approach to crisisology by discussing five evidence-based best practice principles that should be borne in mind for rebuilding a post-corona world. Using the United Kingdom (UK) as a case study, I will highlight these five themes in terms of the impact of the pandemic on our society and the implications for building a new normal during and after this collective trauma event (CTE)<sup>1</sup>.

**Key words:** new normal, principles, post-corona society, pandemic

## New Normal Corona Crisis Management Governance

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### Abstract

Self-reflection on the adequacy, practicability, and democracy of public administrative theory and the complexity, uncertainty, and volatility of the public administration environment in the New Normal Corona and the Fourth Industrial Revolution require the establishment of a new public administrative theory. Self-reflection of public administration has been going from the new public administration that emphasizes social equity to the Blacksburg Manifesto on the adequacy of public administration to the new public management (NPM), New Governance, New Public Service (New Public Service), and the theory of public value, but the role, responsibility, and practicality of government to cope with the new environments has not been examined sufficiently in theory and practice. Moreover, the governments' inadequate response to the recent global Corona-19 (COVID-19) pandemic phenomenon is even more pressing for self-reflection on the adequacy and practicability of crisis management governance. In this presentation, we review the core public values of human security, agility, and shared ethical responsibility for the establishment of crisis management governance required by the New Normal Corona Super-Risk Society, and consider the New Normal Corona Crisis Governance Composition System – Disaster Damage Support Act and Disaster Response System, Disaster Victim Support Personnel Education System, Direct and Indirect Victim Distribution and Compensation System, and Rights Protection Issues to be considered.

**Key words:** new normal corona, public values, new publicness, public administration



## Intermunicipal Responses to COVID-19: Evidence from Chilean Local Governments

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### Abstract

The rate of expansion of COVID-19 has challenged not only health sectors but also public administration systems in general. Public officials are responsible for implementing different strategies in order to respond effectively in the context of this pandemic. One of the lessons of emergency management research is that effective response is unlikely without collaboration. This paper examines the intermunicipal collaboration as a self-organized response from Chilean local governments to COVID 19. It uses a network analysis approach to compare planned and actual emergency management networks operating in the Santiago Metropolitan Region of Chile. Content analysis of 202 formal agreements established by municipalities in 2009–2019 was used to capture the planned network. The actual network was depicted by collecting original data through an online survey that represented the 96% of the local governments located in this Latin American city. The results show a structural gap between planned and actual networks and reveal effectiveness problems associated with the disaster preparedness phase. However, an emergent intermunicipal network has supported collaborative response to the Covid-19 pandemic. The study provides lessons for policymakers, public managers and researchers in the collaborative emergency management field.

**Key words:** emergency management, intermunicipal cooperation, network effectiveness, local governments, network analysis

## COVID-19 VACCINE: When Will It Be Available to Us in Korea?

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### Abstract

COVID-19 was first reported at the end of last year in the province of Wuhan, China. Although WHO declared the outbreak warnings twice last January and March, it was too late for the neighboring countries and the rest of the world to prepare for the spread. It may be related to a lack of timely information of the virus and proper preventive measures to limit the population movement by airplane and other transportations. The coronavirus COVID-19 is now affecting 218 countries with more than 61 million cases and 1.4 million deaths, but unfortunately the numbers are expected to reach a record high around the corner of 2020-2021. A tremendous effort has focused on developing both therapeutics and vaccines against COVID-19 coronavirus. Remdesivir and Chloroquine were initially suggested to inhibit the proliferation of the virus, but recent studies failed to prove it. Several vaccines and antibodies were developed, but will be available in a few countries including USA, UK, China and Russia. This review is intended (1) to compare the therapeutics for their pros and cons, and (2) to provide a rational for "what factors have contributed to the delayed vaccine development and/or distribution in Korea".

**Key words:** COVID-19, vaccine, WHO, virus

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# Keynote SpeechIV

## Collaboration, Synergy, and Risk

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## A Review of Drought Risk and Its Impacts in Pakistan

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### Abstract

Drought is a deficiency in precipitation over an extended period and usually a season or more, resulting in a water shortage causing adverse impacts on agriculture, livestock, and water resources worldwide. In Pakistan, all three types of droughts such as meteorological drought, hydrological drought and agricultural droughts are occurring frequently. Ongoing drought conditions in Pakistan are affecting some five million people in Sindh and Balochistan Provinces. Conditions have recently deteriorated in the drought affected areas with more than 70 per cent of households reported to be food insecure and malnutrition rates having increased to 30 per cent. In Pakistan, the worse affected province of Balochistan after the Sindh is prone to multiple hazards including earthquakes, floods, and drought. Thus, drought response plan and coordination structure are established to recover the drought impacts in Balochistan and Sindh province in Pakistan. Pakistan has experienced an increase in the frequency and severity of drought due a rise in temperatures, adverse effects of El Nino and a decrease in rainfall during the monsoon season.

**Key words:** drought, Sindh and Balochistan Provinces, earthquakes, floods

## Does the Risk Perception on Interlocal Collaboration Hinder the Effective Network Arrangement?

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### Abstract

Interorganizational collaboration is a useful means for prompt and successful response to disasters, albeit not the only possible option. Despite a general consensus of the necessity of collaboration across organizations in disaster contexts, how the risks embedded in interorganizational relation affects the collaboration is still unanswered. This study aims to examine the effect of the interorganizational collaboration risk level perceived by single organizational representatives on forging interorganizational networks. Specifically, this study aims to assess how total perceived risks and the discrepancy between two organizations respectively affect the likelihood of making collaborative joint operations. By utilizing 2015 Seoul EM survey, QAP logistic regression analysis is performed to test related hypotheses. The analysis demonstrates that the total risk level has a negative effect on establishing collaborative ties in the networks, but the disparity of the risk level between the partners has a positive effect on arranging collaborative networks. These results imply that relieving the perceived risk levels from both organizations is essential for initially facilitating interorganizational collaboration. Meanwhile, the disparity between risk perceptions for joint action between organizations can drive the different form of the networks.

**Key words:** collaboration risk, risk perception disparity, inter-organizational collaboration, emergency management

## Disaster Prevention for Fast Growing Cities: Vietnam Disaster Risk Prevention Aid System for Urban Flooding

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### Abstract

This study is to develop and disseminate appropriate technologies for decision support system for urban flood prevention to support those who lack basic knowledge of urban flood prevention (Vietnam officials, city planning officials, residents, etc.). It is developing a systematic framework for enhancing technological perfection and promoting continuous cooperation projects by applying the capabilities of the KRIHS(Korea Research Institute for Human Settlements)'s core technologies, consulting and working-level consultation to local governments vulnerable to flooding in Vietnam. In this study, in consultation with local governments, Lao Cai and Hue were selected as case-targeted areas considering the frequency of damages, the possibility of data acquisition, and the expansion of urban areas. After the end of the project, the management system is expected to be established to create a disaster-free city in Vietnam. In practical terms, the developed urban flood prevention support system can be used for the analysis of disaster vulnerability of Vietnamese local governments. Furthermore, the central government can establish a wide-area and long-term strategy based on the data accumulated through the continuous utilization of Vietnamese local governments for their urban planning. Through the analysis of urban flood vulnerability and the development of a support system for urban flood prevention, technical support will be expanded to other developing countries. The establishment of international cooperation platforms to promote efficient national land management in response to climate change will thus be secured in the long run.

**Key words:** fast growing cities, vietnam, urban flooding, urban disaster prevention, climate change





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# Keynote Speech V

Mental Illness, Pandemic, and Infection Control

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# Exploring the Role of Health Beliefs and Resource Factors on Preventive Behaviors against the COVID-19 Pandemic

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## Abstract

The global spread of COVID-19 requires not only national-level responses but also active compliance with individual-level prevention measures. Because COVID-19 is an infectious disease that spreads through human contact, it is impossible to end its spread without individuals' active cooperation and preventive behavior. This study analyzes the effects of health beliefs and resource factors on behaviors to prevent COVID-19. In particular, it analyzes how resource factors moderate the impact of health beliefs on preventive behavior. A regression analysis showed that gender (female), age, number of elderly people in one's family, perceived severity, perceived benefit, self-efficacy, poor family health, media exposure, knowledge, personal health status, and social support positively affected preventive actions, whereas perceived susceptibility negatively affected them. In explaining preventive actions, self-efficacy had the greatest explanatory power, followed by gender (female), knowledge, personal health status, perceived severity, and social support. In addition, an analysis of moderating effects shows that resource variables, such as education level, personal health status, and social support, play moderating roles in inducing preventive actions

**Key words:** COVID-19, protective action, preventive behavior, health belief model, resource theory

## A Study on the Perception of Infection Control in Korean University Students

Sang Hee Kim

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### Abstract

**Purpose:** Currently, confirmed cases of coronavirus infections (COVID-19) continue to occur worldwide (43.5 million, 2020.10.26.). As a result, interest in virus management is increasing. Korea is no exception, and social awareness of coronavirus infection is increasing the importance of personal hygiene and infection control, such as wearing masks and washing hands. This study conducted a survey on infection control awareness among Korean university students.

**Methods:** The data collection period for this study was from April 20 to May 1, 2020. In order to eliminate regional characteristics, 1,021 university students were selected on a nationwide scale as convenience sampling. The data collection was conducted through a Google questionnaire. The data analysis was performed using the R version 3.4.1 program by performing descriptive statistics and cross-analysis of general characteristics, infection control recognition, and infection control recognition according to general characteristics.

**Results:** Of the 1,021 people in this study, 439(43.00%) were women and 582(57.00%) were men. The total number of regions in Korea was divided into seven, with Incheon accounting for 249(24.39%). 866(84.82%) had no experience in infection control education. The results of a chi-square test using a split table to find out the correlation between gender and the question of “the level of awareness of infection control among college students in our country” showed that men had a relatively higher response rate of “very much” than women. In the university-specific association, C university had a distinctly low response rate of 5.77% for “not much,” while F and G universities had relatively high response rates. In addition, the link between the question of “Our universities are good at managing infections” and the educational experience showed a difference in the percentage of respondents who answered “very much” depending on their educational experience.

**Conclusion:** This study compared the level of virus infection control between individuals and local and national levels of university students in Korea. Based on this in the future, it is expected to be used as basic data for improving infection control systems in individuals, regions and countries.

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## Keynote SpeechVI

Environmental and Conflict Issue, Natural Disaster

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# Trend in Natural Disasters Related to Climate Change, and Response Option

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## Abstract

It has been recognized what the reality of future weather associated with climate change looks like: more frequent torrential rainfall and flooding, a longer and more destructive wildfire season, and droughts. The sooner action, the better chance to prevent the direct impacts of natural disasters in the future. To avoid the worst extreme scenarios of climate change, the 2020s must be the year for coordinated, comprehensive, and collective climate action. Although the 2010s is a regret decade, it is expected desperately to build positive global momentum in climate change in the 2020s. Nowadays, many countries keep declaring net-zero carbon emissions by 2050 including Korea. Many people from all walks of life, including students, teachers, communities of faith, health care professionals are taking to the streets to demand climate action. In addition, financial agents have warned a green swan known as financial crisis due to climate change and started to invest only the projects under ESG. Also, several hundred global companies have committed to set climate goals based on the best available science. However, it is not an easy option but the only option to take to avoid the worst natural disaster scenario together with climate change. Decarbonization is much harder than a diet. The year 2021 will be a decision time to move to a better or worse world in the near future.

**Key words:** climate change, natural disasters, net-zero, climate action, decarbonization

## Development of Urban Environmental Issues with Citizens' Feelings to Solve Environmental Problems through Living Lab: Focused on the Analysis of Priority of Issues in the Air Quality and Waste Sector in Chungbuk, Korea

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### Abstract

Recently, the creation of a sustainable urban environment has emerged as a major agenda item for the city, and various issues such as air pollution, fine dust, waste, and harmful chemicals have emerged due to environmental problems. In addition, the use of living labs, which have recently been highlighted as a methodology for solving urban problems, is increasing. As Living Lab emphasizes solving policy problems through participation from the stage of policy formation based on citizens' consensus, civic participation becomes an important procedural means in finding issues to solve urban environmental problems. In response, this study conducted a priority analysis of issues in the air.

**Key words:** environmental problems, living lab, air quality, waste sector



## Environmental Factors Influencing Fear of Crime: Focusing on Cheongju City

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### Abstract

This study purpose to examine the spatial distribution of crime fears and to examine the characteristics of places where fear of crime are felt. Fear of crime is influenced by personal factors such as past victimized experiences and physical and social vulnerability. In addition, it is affected by environmental factors such as community disorder or integration. This study focuses on the fear of crime caused by environmental factors. First, we used the data that surveyed local residents to find out where they felt fear of crime. In addition, to explain the spatial characteristics of the area, it was analyzed using data from Statistics Korea and public data.

As a result of examining the spatial distribution of crime fear, fear of crime tended to be concentrated in a specific area. In addition, spatial regression analysis was used to examine environmental factors influencing fear of crime, and the results are as follows. The environmental factors influencing crime fear were restaurants, schools, and old houses. In other words, social environments such as restaurants and schools, and physical environments such as old houses were affecting the fear of crime. In contrast, it was found that community integration based on population and household characteristics did not affect fear of crime.

**Key words:** environmental factors, crime, spatial characteristic, fear



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# Presentation I

Military System, Urban Crisis, and Disaster Kit

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# A Study on The Military's Support Strengthening in the National Disaster Crisis

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## Abstract

This paper was written to explore ways to promote disaster support for the military amid the trend of the military playing the role of supporting national disaster as well as defense security in the comprehensive security environment. The military actively supported onsite response and restoration in the event of disasters at home and abroad, including the 2008 earthquake in Sichuan Province and the 2014 Ferry Sewol accident, contributing to the restoration and stability of the community. In this case, this article suggests improved directions for military's disaster support that ensured efficiency, systematicness and speed. First of all, in terms of law and system, the mobilization-related laws and regulations should be revised to allow military forces and resources can be mobilized in the disaster situation. Second, the position of the disaster staff should be reflected in the organization of various levels of the discharge, and the tentatively named "Disaster Specialized Response Force" should be established. Third, it is necessary to redesign disaster management education courses at the military educational institutions and also to establish the Level I Trauma Center. Fourth, the civil, government and military disaster management governance establishment and support system should be strengthened. For example, the foundation should be prepared to enable effective response in the event of a disaster by mutual linkage and integration of securing and stockpiling various equipments and supplies, establishing and executing safety management plans, writing crisis management manuals. Finally, the military's disaster support should be include the commander's key mission as the Military Operation Other Than War(MOOTW). Although the military's disaster support is a difficult task to vitalize in a short period, it should be carried out in stages because of the function and role is importance.

**Key words:** disaster support, disaster specialized response force, governance, military operation other than war(MOOTW)

## A Study on the Introduction of the Military Recruiting System: Based on the Reform Measures of Military Service Laws

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### Abstract

The current military service system is based on the Military Service Act as a concrete law for the performance of military service under the Constitution. The need for the introduction of the recruitment system has been raised due to changes in national awareness of constitutional values for national security, difficulties in the supply and demand of troops due to population reduction, and social changes. Based on the experience of policy advisors and task evaluators of the Ministry of National Defense, Joint Chiefs of Staff, and Military Manpower Administration, this study studied administrative and legal aspects of the need for the introduction of a recruitment system. The purpose of the research is to design the method of introducing the recruitment system as an alternative to the conscription system in legislation. The methods of research were to diagnose the problems of the current conscription system, and to consider the basis laws and prior studies. The study considered changes in the U.S. system, which has shared military security and national interests through the Korea-U.S. alliance. In other words, the government considered the background of the military conscription system, which was maintained, and then switched to a military recruitment system during the Vietnam War in 1973, and the operation of the military service system afterwards. Next, we looked at the cases of Germany, which switched to recruitment in 2011, and France, which switched to recruitment in 2001. The basis law for the administrative system of military service is largely divided into three branches. One is, in effect, about personnel management of the military, reservists and reservists, and the Military Personnel Act, which stipulates military service, rank, service, etc. The second is the Military Service Act, which is the law based on the conscription system that embodies the performance of military service under the Constitution. Third, the Reserve Forces Act on the formation and organization of reserve forces and other related laws, including the Emergency Resources Management Act and the Framework Act on Civil Defense. The research result suggested that if the military service system is changed to a recruitment system, the military service law should be abolished, a new law that institutionalized the military service system should be legislated, and that the military service basic law, tentatively called the Military Service Basic Act, should be enacted, as in the case of the United States. The use of research is expected to be used in legislation to replace the military service law in the future.

**Key words:** military service system, conscription system, recruitment system, military service, national security

# Strategies for Overcoming the Urban Crisis Using Cultural Assets

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## Abstract

Cities are facing the problem of economic decline. Furthermore, social instability is increasing due to the increasing damage from natural and social disasters and the emergence of new types of disasters. Therefore, cities are required to change their policies to effectively prevent disasters and to provide substantial recovery and relief systems. However, social and economic alternatives linked to citizens' lives lack concreteness. Also, the contribution of cultural assets to the development of cities is decreasing. The study believes that the management of disasters should be based on an understanding of the lives of citizens and the specificity of the region, and that the cultural assets of cities must be based. Recent studies on urban resilience include pre-crisis stability and a new level of adaptability, community recovery and sustainability. This study suggests that citizens and communities with cultural consensus have a strong sense of pride in the region, and that expanding participation based on it is desirable to overcome urban disasters.

**Key words:** cultural assets, urban crisis, city, citizen, urban resilience

## Identification of the Composition and Necessity of Disaster Kit

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### Abstract

Korea has established a disaster victim support system in a short time. It is the result of the efforts of experts and administrative experts to stably establish a national support system for psychological support for disaster victims and disaster recovery. This study investigated the opinions of administrators in order to discuss the composition of relief kits and the need for support, and compared them with cases in the US and Japan. The United States and Japan are following a method of encouraging both citizens to prepare for disaster. In preparation for a disaster, a list of items to be included in a disaster relief kit is organized, and items for configuring a disaster relief kit are sold in online shopping malls. In contrast, South Korea has no opportunity for individual citizens to prepare for a disaster. In the event of a disaster, disaster victims rely on kits supported by the nation, corporations and disaster support private organizations to overcome disaster damage. The purpose of the relief kit production and distribution route, which shows a big difference from overseas, is compared and surveyed, and experts' opinions are summarized, and then the composition and distribution route of the relief kit suitable for the situation in Korea will be suggested.

**Key words:** disaster kit, necessity, disaster victims



# Development and Application of a System Dynamics Model to Analyze Heatwave Impacts

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## Abstract

The purpose of this study was to develop a system dynamics model to analyze dynamically the effect of heatwave dynamically and to apply it to a real situation. For the purpose, first, the influencing factors of heatwave were identified through previous studies and, second, theories and dynamic heatwave model was developed. In this step, scenarios according to budget were created and the severities of heatwave by change in variables were measured. Third, a time series data from 2009 to 2018 were constructed and the model was applied to Seoul. The comments on policies are suggested to recommend the direction which governments should seek. The results are as follows: First, the influencing factors of heatwave were classified broadly into natural and anthropogenic factor group, cause and effect of heatwave group, heatwave mitigation policy group, and heatwave adaptation group and they formed a feedback structure. Second, the increases in budgets by 20% as of 2040 were found to decrease the temperature by 1.57°C for eco-friendly vehicle budget, 0.29°C for high-efficiency air conditioner, 0.06°C for heatwave shelters, 0.77°C for the creation of green space. Third, it was found that the most effective policies to decrease temperature were the increase of eco-friendly vehicle and green space creation, and a policy to decrease patients with heat illness was to provide heatwave shelters.

**Key words:** heatwave, mitigation policy, adaptation policy, dynamic analysis, system dynamics, scenario, heat illness



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## Presentation II

Infection Control, Safety, and Vulnerable People

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## Improvements of Chemicals Safety Management by the Disclosure System for the Public in South Korea

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### Abstract

The South Korean government has endeavored for public safety against chemical accidents in the chemical industry. This study addresses the systematic changes chemical safety management and new disclosure system for right-to-know for the public after the hydrogen fluoride leakage accident in Gu-mi City, where 5 workers were killed and 18 were injured. Especially, the company, handling a certain amount or more of accident preparedness substances that are prone to fire and explosion, very responsive, or have high acute toxicity, shall submit a risk management plan report to the government to prevent chemical accidents. And notify the information on the hazard and risk of substances handled in facilities and emergency responses, etc. annually to the public within the effect range. In this paper, we analyzed the huge changes of hazardous substances safety management system and the chemical accident management laws of a national level and the ordinance of local governments and discussed the future direction for chemical safety management.

**Key words:** hazardous substances, chemical accident, toxic, disaster management

## Planning for Securing the Safety of Residential Facilities for the Vulnerable People in a Disaster

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### Abstract

Residential facilities for the vulnerable people in a disaster focus only on quantitative supply, so safety is very poor. The purpose of this study was to present a plan to secure the safety of residential facilities for the vulnerable in disasters through review relevant guidelines and in-depth opinions of experts. The main results as follows; First, a location of facilities that can easily access community facilities such as fire stations and hospitals should be selected. Second, facilities should be installed under the floor where evacuation ramps can be installed for residents with limited mobility. Finally, bedrooms with a sense of psychological stability, and storage of disaster items should be planned so that people can continue living in the facility after a disaster. Considering that the types of disasters in Korea are diversifying and compounding, and the vulnerable people to various disasters, plan a facility that can secure the safety of facilities and improve the quality of life of residents.

**Key words:** disaster, vulnerable people in disaster, residential facilities

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## Change Analysis of Youth Job Searching under COVID-19 Pandemic

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### Abstract

This study conducted a questionnaire survey as to job search activity experience, job search activity status, job search will, and job search methods, etc. for university enrolled students and university students on leave in non-metropolitan regions and metropolitan regions to understand the changes in youth job search activities caused by Covid-19. At the same time, this study verified the correlation by establishing three hypotheses. In addition, this study compared and analyzed changes in workplace preference before and after Covid-19, non-face-to-face briefing sessions-interview and face-to-face briefing sessions-interview preferences, and preferred content. In the results of the analysis, the correlation between spec activity restrictions and job search activity setbacks was found to be significant in both sides. In addition, while preferring non-face-to-face, it was confirmed that interest in areas that could not be experienced without a site, such as site atmosphere, organizational culture, and surrounding environment, were still high. For universities, the need for support such as non-face-to-face mock interviews and mock discussions was suggested. Accordingly, in the future, as a basic development direction of the face-to-face and non-face-to-face mixing method, the accessibility of university students living in non-metropolitan regions is systematically supplemented, and the necessity of supporting youth job search activities, including non-verbal communication and space such as internship, field experience, and startup support was suggested.

**Key words:** youth job searching, COVID-19 pandemic, employment, job-seeking, local university





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## PresentationIII

Safe Community, Disaster Resilience, and Relief Support

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## Achievements of the International Safe Community in Busan Metropolitan, Republic of Korea

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Public Official, Busan Metropolitan City, Republic of Korea

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### Abstract

**Background:** Busan Metropolitan City is the second largest city in Korea and has a complicated city structure and has a very difficult traffic situation due to the formation of roads along the long coastlines. The economic loss due to injury deaths of the citizens of Busan is one trillion KRW (one billion dollar) per year, and is becoming a social economic burden. Moreover, after 2000, Busan has the highest injury death rate among metropolitan cities. Since Busan is expected to have more international exchanges and hold large scale international conventions, it is absolutely necessary for this project to take place. Safe Community Program is absolutely necessary for reaching the goals of Visions and Strategies Project of Busan Metropolitan. Busan was re-designated as an International Safe Community in 2019 with a population of 3.5 million and 16 districts, and successfully held the 7th Asian Safe Community Conference. We have conducted an evidence based safety programs into 7 different categories according to evidence such as natural, economic, social surroundings and loss rates of the citizens. according to ages through the analyzed data so far. Currently, for long term development of ISC movement, Busan Metropolitan is in need of evaluation of outcomes of International Safe Community Program and development of a new strategy.

**Objectives:** The objective of this study is to evaluate outcomes and achievements of the Busan Metropolitan International Safe Community program.

**Methods:** Busan Metropolitan have established a research center to develop a model of a large-scale city and to evaluate the effects of the program so that there would be a long-term development. We analyzed all data from 13 administrative agencies from 2009 to 2018 and compared each year of injury statistics with injury indicators including core indicator, supplementary indicators, and optional indicators as central data in order to identify outcomes of the Busan Metropolitan Safe Community program. We also evaluated effectiveness of programs through a statistical testing.

**Results:** We analyzed the current status of Busan citizens, published an index based on its result, and established the Injury Big Data. We developed, executed and evaluated a scientific Safe Community Program based on injury data. We used it as an evidence data to scientifically improve the disaster preparation program. After we started the International Safe Community Program, Busan citizens' injury death rate has been continuously decreasing since 2009. As well, the rate of injury deaths among all causes of death has been continuously decreasing. The social and economic loss caused by injuries of Busan citizens costed 955.7billion Won in 2009 but it decreased to 826.7billion Won in 2017. Although the rate of injuries in Busan has slightly increased from the start of the International Community Safety Promotion Program in 2009 with 8.8 per 1,000 inhabitants to the first designation in 2014 with 11.6, it has drastically decreased to 5.2 in 2017. Since Busan has started the International Community Safety Promotion Program, most of the injury deaths caused by such as suicide, traffic accident, fall, burn, and homicide showed the consistent decreasing trend. After analyzing the level of community safety index according to areas, since the start of the International Safe Community Promotion Program, traffic has continuously kept a good level of 2, and home safety was level 3 in 2015 but has increased highly in 2018 to level 1. Natural disaster was level 4 in 2015, level 5 in 2016 but has continuously improved to level 2 in 2018. After the first designation as an International Safe Community, traffic culture index from the Busan Metropolitan community safety index has increased from 82.22 in 2015 to 85.29 in 2017. Since the beginning of the International Community Safety Promotion Program, the rate of seat belts has increased from all citizens and the number of drinking and driving has decreased in both male and female.

**Conclusion:** We ultimately plan to contribute to an establishment of the safety culture targeting the whole citizens of all ages, genders, and social classes. The international Safe Community Program of Busan Metropolitan city is that the citizens will be able to lead a healthier life by accident prevention and safety promotion. Through the sustainable Busan Metropolitan Safe Community program, we will be able to realize the government's goals for Busan Metropolitan Safety policies and improve the quality of lives of Busan citizens. Busan Metropolitan will continue on developing a successful model of a Safe Community at a Metropolitan level and lead on to become the modeling example in Korea that is guaranteed sustainability matching the government's policies.

**Acknowledgment:** This work was supported by the International Safe Community Project of Busan Metropolitan City

## Difference Analysis of Disaster Resilience between Survivors and Victims' Families in Disaster Literature: Focusing on Language Network Analysis

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### Abstract

We are already in an era where daily life is a disaster due to severe climate change and the economic crisis (panic) that has been accelerating since 2008. Disasters are always present in our lives, but it is hard to find discussions about disasters and altruism in popular culture that we always encounter. The main purpose of this thesis is to clarify what is the difference in disaster resilience between survivors and victims' families through analysis of language in popular literature containing disaster cases. Through this analysis, the purpose of this study is to ultimately discover the development direction of disaster management in the modern state. Through text analysis of disaster literature works, this study summarizes the characteristics and significance of perceptions felt by survivors and victims' families. As a result, it was found that there were differences in emotions, behaviors, attitudes, role perceptions, etc. perceived by the victim and the victim's family in dealing with a disaster. In particular, the survivor remembers and thinks about the situation at that time and makes resilience to the incident, while the victim's family tries to establish resilience to the incident through investigation of the facts and countermeasures of the government. The survivors were focused on building their own resilience, but the victims' families were more focused on improving the government's countermeasures to form a fundamental solution to prevent such accidents from recurring. This can be judged as social or national resilience. In this study, two essays-type literary works, in which disaster victims and their families directly participated, were analyzed to explore the meanings of disaster literature. However, there is a limitation in analyzing literary works containing the opinions of some victims and their families. In the future, not only essays, but also various disaster-related literature should be compared and analyzed. Based on this comparative analysis, it is necessary to prepare various theoretical foundations for disaster preparedness and resilience, while further elaborating the theory.

**Key words:** Disaster, Resilience, Disaster Literature, Language Network Analysis, Crisisonomy

# The Role of Relief Support Agency and Measures to Develop the Disaster Relief System in Goseong Fire of 2019

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## Abstract

The forest fire in Goseong, Korea in April 2019 caused great damages. However, the government quickly declared the area as a special disaster zone so that institutional aid and support such as life-stability support could be provided. Furthermore, 56 billion won was raised as a donation in regards to a forest-fire disaster. While the government focuses on basic relief and restoration of public facilities, the Korea Relief Disaster Association that provides relief aid under the disaster relief act and distributes disaster contributions, focuses on helping victims to return to everyday life by providing support for disaster aid, relief supplies, temporary housing facilities, and laundry. The donations were distributed not only to the dead, the injured, the homeless, and the tenants who lost their homes but also to small and medium-sized businessmen. However, the fundraising and distribution channels were not unified, and the raised fund was executed without certain laws on distribution targets and standards. In this study, developing the role of disaster relief agencies and disaster relief systems, ways to recover community conflicts due to disasters, and the possibility of using donations to improve mid- to long-term regional resilience are discussed by a case of Goseong fire of 2019.

**Key words:** Goseong fire of 2019, Korea Disaster Relief Association, disaster relief & care, local recovery, regional resilience



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## PresentationIV

Altruistic Behavior, Consumer Participation, and Prevention

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## How Strongly Do We Practice Altruistic Behavior in a Crisis Situation? An Analysis on Altruistic Language Networks in Disasters

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### Abstract

The purpose of this study was to explore the human nature and behaviors in disasters in the context of universal human behavior with habitual and institutionalized styles. This study sought to find an answer to question ‘What do humans do in the face of infectious diseases and fears caused by the emergence of new viruses in modern society?’ This exploratory study on the altruistic nature of humans in disaster adopted text mining through social networks and analyzed a total of 44,411 media articles about altruism and three infectious diseases. An extensive search of words related to the diseases was conducted, including “sharing,” “comforting,” “rescuing,” “devoting,” “helping,” “caring,” “transferring,” and “cooperating.” The results showed that during disasters, humans are very cooperative and help restore and rebuild society and their community through various altruistic behaviors.

**Key words:** altruism, disaster, semantic network, text mining, COVID-19, MERS, Swine Flu

## Development of Evidence-Based Fall Prevention Program in Yangsan City, Korea

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### Abstract

**Background:** Among the causes of death due to unintended injury accidents, falls are rated second worldwide following traffic accidents. Falls lower the state of physical, mental and social well-being, and are important causes in increase of morbidity rates, hospitalization rates, death rates and medical fees. Because falls can be prevented beforehand, there needs to be a research on its prevention and a monitoring system.

**Objectives:** The objective of this research is to analyze the current state of falls in city of Yangsan and understand existing problems so that basic data can be provided for setting up policies and developing a program to prevent fall accidents of the citizens.

**Methods:** In order to analyze the current state of falls for the citizens of Yangsan, the annual report on the causes of death statistics from the National Statistical Office and the injury data from the Yangsan Fire Station 119 First Aid Activity Log were analyzed. As well, in order to understand the current state of falls in households, an epidemiological survey was conducted to people from 1,100 households in Yangsan. The household visitation survey was conducted from December 3, 2019 to December 18, 2019. The collected data were analyzed using SPSS 25.0 based on the research objectives, and the frequency and percentages were investigated.

**Results:** According to statistics from the National Statistical Office, the injury death rates from falls among the injury mortality rates by causes was 2.0 per 100,000 people in Yangsan. In other words, it was significantly lower than that of other cities in Gyeongnam and the fall mortality rate nationwide. Nevertheless, in the injury transfer rate analyzed from 119 First Aid Activity Log (2018), accidents due to transport were highest with 4.0 cases out of 1,000 persons, followed by falls with 2.8 cases. In addition, after analyzing the injury causes of the citizens of Yangsan through household visits in 2019, falls showed the highest percentages with 45.9% followed by crashes with 23.0% and traffic accidents with 17.6%. In terms of age, elders aged 65 and over had an especially relatively higher rate with 9.5 out of 1,000 persons in the injury death rates from falls.

**Conclusion:** Because of the recent change in population with a decrease in children and increase in the elderly, there is a sudden increase in the safety vulnerable class. Thus there is an increase in the socioeconomic burden due to the economic burden from the death rates of falls. Therefore the government and related organizations should put fall prevention as the primary task and develop and spread an effective evidence-based safety promotion project based on the results of this research.

**Acknowledgment:** This work was supported by the International Safe Community Project of Yangsan City

**Key words:** falls, injury accidents, prevention program, safety promotion

## Factors Influencing Korean Consumers' Boycott Participation in the Context of COVID-19

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### Abstract

COVID-19 is causing huge economic and social damage worldwide. This study identified factors that affect Korean consumers' intent to participate in a specific consumer movement aimed at mitigating the economic impacts of the pandemic. An online survey was conducted with 620 adult consumers in Korea over eight days from May 18 to 25, 2020. Data were analyzed via structural equation modeling, using the following factors: social support, social trust, optimism about overcoming the crisis, boycott participation motivation, and boycott participation intent. Our results showed that social support and social trust both have a positive effect on participation intention for the Korean boycott through optimism about overcoming the COVID-19 crisis. Reciprocity motives and self-esteem motives also increase boycott participation motivation, although income or tax motives and career motives did not have such an effect. The study's findings highlight that the following social activities are required to increase Korean consumer's boycott participation intent. First, different efforts are necessary to convince consumers that the social impacts of COVID-19 can be overcome if members of society work together. Second, consumers' reciprocity motives need to be stimulated by emphasizing that anyone can face a crisis and get help from others. Third, consumers' self-esteem should be stimulated. The self-esteem motive is the recognition that one can improve social value by expressing or acting on one's beliefs. Through public advertisements showing how boycotts can improve social value, consumers can be encouraged to participate in them. The fall of small business owners brings a significant crisis to the local economy. To overcome this financial crisis, all members of society must cooperate. Korean consumers can cooperate by participating in a boycott to purchase goods and services from small business owners who have been affected by COVID-19. With boycotts, consumers can buy goods and services at a discount, while small business owners generate profits, which results in positive outcomes for both parties. Therefore, boycotts need to be utilized to a larger extent. We must support those who have been financially impacted by COVID-19 and try to stay optimistic about overcoming the crisis. We also need to encourage consumers' reciprocity motives and self-esteem motives through public advertising.

**Key words:** consumer, boycott, COVID-19, self-esteem

## Development of Traffic Accident Prevention Program in Gangseo-District of Seoul Metropolitan Government, Korea: Evidence-Based Approach

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### Abstract

**Background:** Seoul Metropolitan Government is the largest city in Korea with heavily preserved traditional ways of living. In 2018, injury statistics show that in Gangseo-District of Seoul Metropolitan Government, suicide ranked the highest followed by traffic accidents, falls, homicide, poisoning and others. Between 1980 and 2015, the number of automobiles has increased over 30-fold in Korea. Thus there is a high level of automobile traffic which leads to the problem of traffic accidents. Since there are many cars due to the near to airport, it is highly recommended that a program for preventing traffic accidents is developed because of its reputation of having many accidents.

**Objectives:** The objective of this research is to analyze the traffic accident statistics of Gangseo-District of Seoul Metropolitan Government and to find out the most effective program for citizens according to the evidence based approach.

**Methods:** In order to provide supporting data according to the current situations of citizens' traffic accidents, we first analyzed the death rate of traffic accidents and its progress of injury death statistics data from Statistics Korea. As well, we analyzed the statistic data of traffic accident of the Police Agency to find out the causes of traffic accidents and their actual conditions.

**Results:** It was found that in Gangseo-District, the traffic accident occurrences were 1.7 times higher in men than women, and there was an increase in injury rate as ages became higher. There was the highest number of accidents in November when analyzed monthly, and in Thursday when analyzed weekly. There was the highest number of injury due to accidents during rush hour of 4PM to 6PM when analyzed daily. There was the highest injury rate by traffic accidents from people of ages 45 to 64 (middle-aged), and the highest injury occurrence rate in drinking and driving accidents according to vehicle types was from rental car. For children under 14 years old had the lowest wearing helmet rate compared to other age groups. Therefore we developed and spread a car accident prevention education program for children and the elderly. For teenagers, we developed a program for wearing helmets, and for adults, we developed and spread a program for making a safe driving culture. As well, we made school zones and senior zones around schools and senior centers.

**Conclusion:** Because there is a high injury rate due to traffic accidents in the middle-aged which are important working age groups in males, there will be an increase in economic loss and in socioeconomic burden. There needs to be a traffic safety program targetted towards men. As well, the government and related organizations should modify road safety facilities considering the district characteristics, and put traffic accident prevention as the foremost task to develop and distribute an effective evidence-based safety promotion program. Evidence-based approaches are prominent on the national and international agendas for health policy and safety promotion. Future stages will involve program evaluation, revision, and difussion. This development process will guide other programs specific for other safety promotion programs.

**Acknowledgment:** This work was supported by the Gangseo-District of Seoul Metropolitan Government

**Key words:** safe promotion, injury, traffic accident, evidence-based practice

# Public Health Crisis as Sociopolitical Dilemma: Face Mask Debate in the US amidst COVID-19

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## Abstract

Despite the massive confusion, dispute and misinformation around the benefits from everyone wearing face mask in early stages of COVID-19, it seems evident now that mask wearing is widely-adopted even in the United States as a low-cost and effective alternative to reduce human-to-human transmission of virus. However, the legal mandates to wear face coverings remain controversial due to its political and sociocultural contexts which could be interpreted differently by the personal background, experiences and knowledge of individuals. Multiple studies reported mandating face mask use is associated with a decline in the daily COVID-19 growth rate, while others argue that there is only weak evidence for wearing a face mask as an efficient hygienic tool to prevent the spread of a viral infection and people relying on face masks may have false confidence and tend to ignore other protective behavior such as staying at home. Although a mandatory mask wearing policy was supported as an effective, fair and socially responsible solution to curb virus transmission, many people have protested against mask mandates, particularly in Western individualistic cultures, and the countrywide or statewide mandatory policy has been subject to variable levels of uptake and compliance. Understanding people's behavior and perception on this issue is important because these will affect whether the mask mandates are accepted and feasible to implement, which could eventually achieve an effective control of transmission. A number of reasons behind resistance to mask wearing have been discussed in the literature such as personal image or stigma, collectivist or individualistic culture, cognitive biases, and perceived attack to their freedom. The role of age, sex, race, political orientation and perceived effectiveness of mask have been tested, but most of these studies are not based on the well-designed survey with a nationally representative sample. To date, it still lacks survey-based evidence to determine who are likely to support the mask wearing mandates and whether their level of support for a mandatory policy is matched with their actual behavior of wearing a mask in public. Who wears a mask but does not support the mask mandate? Who does not wear a mask regularly but do support the mandate? This study aims to answer the questions based on a nationally-representative survey. A better understanding of the mismatch would reveal hidden dynamics behind mask wearing behavior and compliance to the mask mandate, which will help the public health authorities to devise policies regarding mask wearing as an effective intervention to COVID-19.

**Key words:** face mask, public health crisis, policy mandate, COVID-19



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# Presentation V

Voluntary Service, Regulation, and Support Activities

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# An Empirical Analysis for Strengthening Voluntary Fire Service Capabilities: Perception of Volunteer Fire Fighters in Chungbuk, Korea

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## Abstract

The purpose of this study is to suggest ways to strengthen the desirable role of voluntary fire brigade active in the region. As modern society becomes urban, high-tech, high-density, industrial, and underground, disaster damage is also large-scale and long-term recovery efforts are required. In this context, the volunteer fire brigade accurately grasps the geography and status of the region and supports fire-fighting officials as a volunteer organization with expertise. The main findings are as follows. First, it is necessary to expand the role of volunteer fire brigade in the community. Second, while the practical training necessary for the field activities of the voluntary fire brigade should be strengthened, specialized education and training tailored to the function and role is needed. Third, it is necessary to prepare measures to strengthen voluntary fire brigade capacity in response to changes in the disaster environment and the conversion of firefighters to national positions. Fourth, it should be possible to support the safety of residents' life, such as a forest fire team, a disaster expert team, a disaster environment expert team, a mountaineering team, an urban disaster prevention team, and a helper team for the elderly according to local circumstances. Fifth, the organization of the volunteer fire brigade should be reorganized into an organization that can reflect the characteristics of the region. Sixth, it is necessary to enact an ordinance that requires large-scale local governments to bear the expenses necessary for the operation and activities of the volunteer fire brigade.

**Key words:** voluntary fire brigade, community service, disaster management, disaster prevention, education and training

## Regulation of Digital New Deal Policy and Personal Information Protection Act in Infectious Disease Situation

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### Abstract

The impact of Covid-19 has accelerated untact and digital transformation across society. Meanwhile, on July 14, 2020, the Korean government proposed investment and job creation by sector as a national project to recover the economy after the COVID 19 incident, as three pillars of the Digital New Deal, Green New Deal, and Reinforcement of Safety Net by 2025. Here, the digital new deal is to enhance digital growth based on ICT, which is the strength of e-government infrastructure and services. However, civic groups are raising voices of criticism for the government's increasing interest in the use of "data" and overlooking the unfairly expanded use of "personal information" included in the data. Now, for the rational protection and utilization of personal information, we will redesign the entire system of the Personal Information Protection Act. Work should be undertaken to decriminalize punishment rules. Furthermore, for the rational regulation of the Personal Information Protection Act, we review the rational design of personal information before proceeding with the Digital New Deal. Furthermore, the rationalization of the regulatory system for the rational handling of personal information and the use of non-personal information should be reviewed.

**Key words:** infectious disease crisis, digital new deal, personal information, public data, human dignity and value, right to pursue happiness, freedom, punishment

## Return of the State?: Public Supply of COVID-19 Face Masks

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### Abstract

Once Korea was the second-highest COVID-19 confirmed country in the world in early 2020 but did succeed in flattening the curve in such a short time. When it comes to this success wearing masks of people has been playing an important role to hinder the contamination. Although there were chaotic situations at the beginning of the provision of public facial masks, Korea has shown an effective way of provision of facial masks through governance against COVID-19. The purpose of this presentation is to attempt, from the perspective of governance beyond government, to approach and analyze the cooperation mechanisms as were shown in the case of coping against the COVID-19 pandemic. This presentation describes the structure of that governance and examines the relations between actors. On the basis of this information, the inner dynamics within their interactions were investigated and key factors for and hindrances to the success were identified.

In a relatively short period of time, the government took an initiative in the policy of introducing a public mask. Based on strong government control in the supply of public masks, there were also cooperation between government and private actors such as provided through pharmacies. Additionally, mask maps, results of leading private application developers based on government-provided information, played an important role in the effective distribution of masks. This collaborative governance has been the driving force in overcoming the crisis of lack of masks and soaring prices.

**Key words:** COVID-19, pandemic, facial mask, governance, collaborative governance

## An Empirical Analysis of Disaster Relief Welfare Support Activities: Enhancing Disaster Resilience of COVID-19 Victims

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### Abstract

The purpose of this study is to analyze the relationship between disaster relief welfare support activities and disaster resilience in the case of providing disaster relief welfare services to COVID-19 victims. The main results of the study are as follows. First, the active agents that can enhance the local community or national disaster resilience are leaders of the state and local communities, resident organizations, welfare organizations, and civic groups. Second, when applying the support principle to disaster relief welfare support activities led by citizens, local governments, and central governments, the support principle has a positive effect on resilience. Third, when applying cash, daily necessities, care services, and medical services to disaster victims, reflecting the principles of equity, timeliness, continuity, expertise, and urgency as support principles can improve the resilience of disaster victims. Fourth, disaster resilience is improved by cash support and counseling services supported by local governments, welfare activities for care services, medical support, and volunteer participation. Fifth, disaster resilience will be improved if disaster victims continue to receive integrated disaster relief and welfare support services.

**Key words:** COVID-19, disaster relief welfare, disaster resilience, disaster victim, support activity

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# PresentationVI

Estimation, Improvement, Analysis, and Resilience

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# Estimation of Runoff for Unmeasured Reservoir Based on Observed Data

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## Abstract

Based on observed data such as the amount of overflow and the amount of use of reservoirs, this manuscript project estimated the amount of overflow and supply by installing observation sensors on the overflow and irrigation ditch of reservoirs selected as study reservoir. The water balance analysis of the study reservoir was conducted using data base for measuring the total outflow and inflow of the reservoir. Then development of technology for estimating amount of supplied water from reservoir using observed data base on study reservoirs.

Grouping and parameter estimation by reservoir characteristics and simulation of water balance model for prediction of water storage for unmeasured reservoir. 101 study reservoirs were selected for the prediction of unmeasured reservoirs storage and grouped by characteristics of selected reservoirs. The reservoirs belonging to each group were verified by estimating the parameters of runoff model, obtaining statistics for each calculated parameter, presenting a representative value, and applying it to the unmeasured reservoir. Then Water balance analysis to study reservoirs and presenting representative values of parameters through grouping by reservoir characteristics.

**Key words:** observed data, water balance, reservoir, parameter estimation, grouping

## A Study on the Improvement of Residents' Community Based on CPTED: In Case Study of Reading Park in Tangerang Selatan, Indonesia

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### Abstract

This study aims to propose a CPTED plan to create a safe environment in Ciputat region based on Indonesia and International Development Cooperation. We conducted joint research with Indonesia to share the outcome of the Daejeon City Safety Brand (Lighthouse Returned to The City) project. Find out the current situation and problems in Tangerang Selatan, Indonesia proposes a unit project based on the CPTED principle, and suggest environmental improvement measures that can satisfy citizens. The target area in Ciputat has the highest population density among the three candidate sites in Tangerang Selatan, has cultural facilities that are lower than that of the population, and the number of crimes has been increasing over the past three years. Thus, 'Reading Park under Ciputat Flyover' in Ciputat, which is an underdeveloped environment but has potential, was selected as the target site. We proposed a unit plan for each CPTED principle in order to enhance the vitality of local communities and play the role of a cultural hub by creating a safe environment based on CPTED. The task in the future is to investigate the satisfaction of residents' plans through site visits.

**Key words:** crime prevention through environmental design(CPTED), international development cooperation, community design, natural surveillance, maintenance and management



## A Study on the Issue Analysis of COVID-19 of Korea on Newspaper Analysis of 2020

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### Abstract

The rapid spread of COVID-19 is threatening the lives and safety of the interested people and reducing social and economic activities. The role and function of the media play a greater role in the face of an infectious disease crisis. This is because most of the information and opinions about risks are delivered to the public through the media, which creates a public awareness of risks. In other words, people indirectly recognize dangers through the media, naturally focus on the media in an attempt to prevent it according to coping strategies, and become dependent on the media accordingly. This study is a content analysis on the COVID 19 of Korea as reflected in newspapers produced of 2020. The study thus collected news that used the key word 'COVID 19' from January to November of 2020. The contents of the news, including their category and issues mention, were then analyzed. The methods used in the analysis are keyword related frequency analysis, association analysis, and sentiment analysis.

**Key words:** COVID-19, newspaper, issue analysis, frequency analysis, association analysis, sentiment analysis

# An Analysis of the Relative Importance of Disaster Relief Welfare Support Activities to Improve Disaster Resilience of COVID-19 Victims

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## Abstract

This study aims to measure the relative importance of disaster relief welfare support activities to strengthen disaster resilience for COVID-19 victims. The main results of the study are as follows. First, when supporting activities for disaster relief welfare with a focus on welfare aspects to strengthen the resilience of disaster victims, the expert group recognized that the support principle was the most important in terms of relative importance and priority. Second, the priority of the support subjects appeared in the order of local government → central government → civil society → individuals and public/private enterprises. Third, the priority of the support principle was timeliness → transparency and equity → expertise. Fourth, the priority for economic support for disaster relief appeared in the order of cash value → daily necessities → bank loan. Fifth, the priority for social service support for disaster relief was in the order of medical service → caring service → volunteer service → psychological counseling service. Finally, the priority of all measurement elements through complex weight analysis is as follows. The timeliness of the disaster relief support principle was ranked 1st, the financial assistance was 2nd, the social service was 3rd, the daily necessities 4th, and the volunteer service 5th.

**Key words:** COVID-19 victim, disaster relief welfare, disaster resilience, relative importance, AHP analysis

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# The Relation among Occupational Identity, Quality of Service and Proactive Behavior of Social Worker in Times of Rapid Change: Focusing on the Mediating Effect of Proactive Behavior

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## Abstract

The purpose of this study is to provide basic data necessary to strengthen the capacity of social workers by examining the relationship between occupational identity, quality of service, and proactive behavior of social workers, focusing on the mediating effect of proactive behavior. To achieve this purpose, of the study, the survey data of 270 social workers working in social welfare institutions and facilities in southern Gangwon-do and Yeongdong region were analyzed. As a result of the study, the quality of service of social workers was high among social workers in their 40s and social workers in child/family service organizations. The occupational identity of social workers was high in the case of high age, educational background, and position. As for the proactive behavior of social workers, when their age or education are high, they do not settle for a given situation, and have a high attitude to take the initiative in solving and changing the situation. As a result of verifying the mediating effect of proactive behavior on occupational identity and quality of service, it was confirmed that occupational identity affects proactive behavior and quality of service, and proactive behavior influences quality of service. Based on the research results, it was suggested to form a gender-equal organizational culture, provide opportunities for empowerment, strengthen communication level, and provide education and supervision so that social workers can perform proactive behavior in a changing era.

**Key words:** social worker, occupational identity, quality of service, proactive behavior

## Research on Communication Mechanisms in Public Crisis Management in China: Focused on COVID-19

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### Abstract

Recently, accompanied with the growing number of public emergency affairs and the growing demand to the government's function of service, the malpractices of the government's communication system in public crisis management have been exposed. To build and perfect communication mechanism in public emergency a hot topic which attracts people's eyeball. In the process of government's public crisis management, Crisis communication is an important part of crisis management. After experiencing major public crises such as the SARS in 2003 and the Wenchuan Earthquake in 2008, China's crisis early warning management, emergency management and public crisis management systems are gradually improving. However, in the process of public crisis management, the communication mechanism in public crisis has many problems with the delay of vertical communication within the government, the poor communication of horizontal information, and incomplete communication networks of multiple subjects. This paper divides China's public crisis communication mechanism into internal and external government in public crisis, and explores the problems existing in theory and practice. This paper conducts an empirical analysis on the government communication mechanism of the Covid-19. The article analyzes it after some important events such as academican Zhong Nanshan's public statement that "the virus can be passed on from people," and the establishment of the epidemic prevention and control headquarters in Wuhan. It is divided into two stages before the outbreak and after the outbreak. And it includes the public's satisfaction survey on the government crisis communication mechanism in the two different stages of the outbreak, the problems in the government communication mechanism in the each stage. Based on theoretical and empirical analysis, this article proposes some advice to improve China's crisis communication mechanism from three aspects: optimizing internal and external communication between the governments in public crises, and building a benign interaction between the government and the media Countermeasures. It is expected to contribute to policy making for the government's ability to prevent, control and solve various crisis.

**Key words:** emergency management, public crisis management, communication mechanism, COVID-19

# A Study on the Development of National Crisis Management Policy Based on Artificial Intelligence

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## Abstract

The purpose of this study is to explore what is important to the national crisis management policy based on artificial intelligence (AI). It is estimated that artificial intelligence (AI) is the most remarkable information and communication technology due to the development of the era of the fourth industrial revolution in which the concept of comprehensive security is applied. Therefore, it is to explore what factors are important for AI-based national crisis management. First of all, we looked at cases of artificial intelligence operation and R&D for this purpose. The selection of important factors was made through consultation with long-time experts in ICT, security and disaster areas. As a result of SWOT analysis, we derive factors that influence national crisis management policies based on artificial intelligence. Experts have selected important factors from among the derived factors. These are important factors that should be considered first in the formulation and execution of national crisis management policies based on artificial intelligence.

**Key words:** artificial intelligence, national crisis management, information and communication technology, 4th Industrial Revolution

## Development Of Early Warning System For Public Health Emergencies In China's Emergency Management: Focus On Sars, H7N9, COVID-19

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### Abstract

As the number of public health emergencies in China continues to increase, there is a growing need for emergency management. The early warning system of public health emergencies, which can greatly reduce the damage mechanism, has become one of the hot spots in the research. China's emergency management system is now building a belong to their own set of effective public health emergencies emergency management mechanism, At present, China's early warning system has developed to some extent, but there are still some shortcomings, such as unreasonable subjects of early warning, backward standards of early warning, insufficient scope of monitoring subjects and so on. This paper will analyze what changes have taken place in China's early warning system in the past two decades through literature analysis and case analysis, and further study how to improve the early warning system of public health emergencies.

**Key words:** emergency management, public health emergency, early warning system, system, China



# A Study on In-vitro Efficacy & Utilization of Antimicrobial Copper Film Attaching to Window for Responding to COVID-19 and Others

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## Abstract

In the era of the global Corona 19 pandemic, there is a risk of cross-infection in hospitals at the stage where the treatment and vaccine are currently being developed, so it is necessary to personally enhance acquired immunity and generalize the life prevention system due to the performance of copper ion in the social environment. Based on the research and development cases of East and West, the necessity of antimicrobial film and its efficacy were analyzed through the antiviral performance test. The Korea Institute of Construction and Living Environment (KCL) has obtained antibacterial performance certification and anti-viral test performance certification from the "National Approved Performance Certification Institution". At that time, NCCP 43326 Human Corona Virus (BetaCoV/Korea/KCDC03/2020), which was licensed by the Korea Centers for Disease Control and Prevention, was sold and tested in the laboratory in accordance with bio-safety standards, resulting in satisfactory results in the anti-virus performance test and performance certification. A government-centered quality clinical trial study is proposed to compare a control group of identical conditions without copper films with a group of experiments in a windowed space constructed with antiviral copper film during the average 4-day survival of the virus. Thus, the legislation will be centered on large buildings living disaster-vulnerables and emergency vehicles to ensure disaster safety sovereignty by satisfying the needs of modern people seeking a safe environment and healthy life throughout society through the construction of anti-bacterial film for glazing attachment.

**Key words:** pandemic, COVID-19, cross-infection, vaccine

# The Consciousness and Response System for COVID-19 Pandemic Crisis

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## Abstract

With the rapid development of China's economy and society, various public crisis events have also appeared frequently. Natural disasters, sudden security accidents, social security events, and various public health events have emerged endlessly, which not only negatively affects national security, social order, and the image of the government, but also causes huge losses to the lives and property of the broad masses of people. COVID-19, which is terrifying all around the world, is a new infectious and seriously epidemic disease. Recently, COVID-19 is spreading around the world wide. In response, countries are trying to do anti infection measures and prevent the spread of COVID-19. Combining with the theoretical research on the crisonomy of pandemic disease, this paper conducts an empirical analysis on the perception and response system for COVID-19. Based on theoretical and empirical analysis, this article proposes the high level of consciousness of the people is the most important in managing the infectious disease crisis and proposes the response system for infectious diseases.

**Key words:** consciousness, infectious diseases, crisis management, COVID-19

# An Analysis of the Factors Influencing the Satisfaction of Emergency Disaster Relief Funds

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## Abstract

This study aims to derive the elements that cause differences in the satisfaction about emergency disaster relief funds and the influential factors that affect the level of satisfaction. For this study, a questionnaire about the satisfaction of emergency disaster relief funds was conducted on 216 residents in Chungcheongbuk-do Province and the collected data was analyzed through descriptive statistics with SPSS 25.0 and T-test. The results of this study can be summarized as follows. First, satisfaction about the application method and procedures of emergency disaster relief funds was higher for women. Second, satisfaction about the speed of distribution was higher for women. Third, satisfaction about the distribution style was higher for women. Fourth, satisfaction about the sum of the funds was higher for women. Fifth, satisfaction about the method of fund usage was higher for women. Sixth, satisfaction about the places of use was higher for women. Lastly, men evaluated the policies of emergency disaster relief funds positively. Since this study only performed an analysis on gender differences amongst sociological characteristics, it is anticipated that it can contribute to constructing and designing an effective distribution model for similar cases of emergency disaster relief funds by conducting additional analysis and research.

**Key words:** emergency disaster relief fund, satisfaction, influential factors of satisfaction, COVID-19, infectious disease crisis

## Cooperative Childcare in Korea during the COVID-19 Period

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### Abstract

My hypothesis: In crisis management, not only the policy or the efforts of public administration but also the internal capacity of communities are very important.

An evidence: Childcare in Korea during the COVID-19 period.

The childcare system in Korea is well established and well operated. Most preschoolers are cared for in day care center or kindergarten. Whether national, private or cooperative, most of the costs for the use of these care facilities are borne by the state and local governments. Entrusting a child to a cooperative childcare day care center requires additional costs such as investment, union fee and volunteer activities. Childcare facilities in Korea were and are closed from time to time during the COVID-19 period. One of the double-income parents who entrust a child to a facility operated by state, local governments or private owners could not go to work. Working mom had to face difficulties in her work life. Childcare cooperatives have organized mutual aid or joint parenting among members. In Korean traditional terminology, this mutual aid called 'Poom-a-si'. Through poom-a-si, parents participating childcare cooperatives endure this crisis relatively well.

**Key words:** childcare, cooperatives, crisis management, community, mutual aid

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# Analysis of COVID-19 Crisis Related Culture and Art Support Policy

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## Abstract

This study aims to derive problems through analysis of culture and art support policy related to corona virus disease (COVID-19). It is also to present culture and art support policy in response to social disasters. After the spread of COVID-19, we examined website reference and article from relevant ministries and institution in domestic, the regional cultural foundations for investigation of culture and art support policy. The analysis results are as follows. First, it absents comprehensive policy to manage and regulate circumstances of the culture and art field. Second, it is not enough understood about and culture and art environment and cultural artists. Third, it is necessary interpretation of aggressive system such as, delay of supporting business, business plan changing and simplification of adjustment. Finally, support policy lacks diversity due to existence of centralized public offering. Based on the analysis, we suggest policy to support culture and art in response in COVID-19 and social disaster in the future. First, it has to construct comprehensive and long-term supporting plan considered art ecosystem. Second, it needs to change the business and support system to ready for newly changing culture and market. Third, it must convert into structure that establish and promote regional-oriented culture and art policy. Lastly, it necessary to find a way of supporting artist for their practical creative activity.

**Key words:** COVID-19, infection disease crisis, culture and art, culture and art policy, culture and art response

## Air Pollution Crisis Management Plan in Ulaanbaatar City: The Ger Areas of Ulaanbaatar City

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### Abstract

The purpose of this study is to identify the causes of air pollution in order to solve the air pollution problem in Ulaanbaatar, Mongolia, and to present a crisis management alternative that can be practically utilized.

At present, the air pollution in Ulaanbaatar is 12 times higher than the international standard and is continuously deteriorating. There are many projects outside the Mongolian government to solve this serious problem, and the disease of the population exposed to air pollution is still increasing.

Since the central heating system is not connected to the Ger area of Ulaanbaatar, citizens use coal, lignite, firewood, and waste tires to heat and cook during the cold winter months. These fuels cause serious air pollution in the ger area or in cities and pose a great threat to the urban environment and the health of citizens, especially children.

Unlike the declarative policy of the Mongolian government, this study intends to propose a viable policy that can realistically take effect on the air pollution of Ulaanbaatar in a short time by using data analysis and the like. To this end, in this study, the research is conducted by dividing into theoretical discussions and external cases, an analysis of the realistic state of the ger area in Ulaanbaatar, the cause of the problem, and a specific crisis management plan that can solve a serious problem through analysis of the current state of contaminated areas in the city I did.

**Key words:** city Ulaanbaatar, Ger area, air pollution, cause of occurrence, crisis management plan

# Psychological Disorders and Stress Behaviors in Public Crisis: Research on COVID-19 Stress Adjustment Mechanism of Korean People Based on Resilience

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## Abstract

The goal of this research is to explore the relationship between psychological disorders, resilience and COVID-19 stress in order to contribute to overcoming the crisis of COVID-19 epidemic. In other words, through empirical study on COVID-19 stress, this study tried to find an effective flexible adjustment mechanism that can buffer the stress response to public crisis. The findings of the study are as follows: firstly, the study found out that psychological disorders (anxiety & depression) had significant influences on resilience statistically, secondly, depression was negatively correlated with all sub-categories of COVID-19 stress and anxiety had significant influences on COVID-19 stress statistically, among the sub-categories of COVID-19 stress, cognitive evaluation was negatively correlated with anxiety, but panic and defense response was positively correlated with anxiety, and thirdly, resilience had an indirect effect on the relationship between psychological disorders and all sub-categories of COVID-19 stress. Findings provide impetus for future investigation testing additional hypotheses and mechanisms of the COVID-19 stress behaviors.

**Key words:** public crisis, COVID-19, stress, resilience, psychological disorders

## Monitoring of Traffic Accident Hazard Areas in Chungbuk National University Affected by New Two-Wheeled Vehicles

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### Abstract

It has been predicted that the risk of traffic accidents would increase due to the large-scale inflow of rental platforms of new types of two-wheeled vehicles like an electric kickboard and Gcooter into schools. Therefore, this monitoring aims to warn people and prevent accidents by investigating traffic accident hazard areas in the school in advance and producing a safety map. For research and monitoring, questionnaire survey, which is an empirical analysis, and field monitoring were carried out. The study result displayed that there was a lack of preventive effects, because Chungbuk National University's traffic management guideline does not contain two-wheeled vehicle regulations, and the students highly agreed with the risk of traffic accidents in the school. Additionally, field monitoring was performed in all the areas, where were regarded as dangerous in the survey, and a safety map indicating the danger of school traffic accidents was developed. The five risk factors of school roads revealed in the process are an ambiguous legal status of school roads, the danger due to non-separation of pedestrian roads and car roads, a lack of roads for two-wheeled vehicles, the excess of speed limit, and facility management insufficiency. To improve these issues, this study suggests solutions for individual hazard areas, such as law revision and development of school's local laws and regulations for a clear legal status, introduction of bypasses and colored guidance lanes on the road, installation of 3D trick art and speed measuring cameras, and installation of n-shaped bollards and speed reducers.

**Key words:** two-wheeled vehicle, platform, university, traffic accident, safety map, legal status, local laws and regulations



# Application of River Flow Analysis Model to Respond for Hazardous Chemical Leakage Accidents: Comparative Analysis of HDM-2Di Model and Nays-2DH Model

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## Abstract

Chemical accidents cause damage to people's lives and property, causing environmental pollution such as water, air and soil, and causing overall damage to the ecosystem. It also hurts crops and livestock, consuming enormous costs and resources. Korea was rapidly urbanization and industrialization. As factories were located near rivers, the water environment changed dramatically. In the past, phenol leakage, one of the harmful chemicals, occurred and many people were damaged. It is necessary to respond quickly to chemical leakage accidents in case chemical accidents continue to occur. This study used a two-dimensional river flow analysis model HDM-2Di with SU/PG technique. Through simulation, river flow was checked when hazardous chemical spill occurred. This study is very meaningful in that it can proactively grasp the flow of hazardous chemicals according to boundary conditions. In addition, the advantages and disadvantages of the two models were compared by comparing the simulation results with the Nays-2DH model used worldwide, and the applicability was reviewed through verification with the ADCP measurement data.

**Key words:** chemical accidents, HDM-2Di, Nays-2DH, river analysis model, ADCP

## Problems and improvement measures of the response system for vulnerable groups in the event of an infectious disease Focusing on group infection in nursing homes

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### Abstract

The purpose of this study is to examine the response system of nursing homes according to social distancing in the event of a new infectious disease crisis, which can be viewed as a disaster, and to present problems and improvement measures that appear to caregivers living in nursing homes among the vulnerable. As COVID-19 outbreaks around the world, a response system for crisis management of infectious diseases is being discussed. However, the problem of group infections in social welfare living facilities such as nursing homes is occurring in Korea due to inadequate disaster response systems for infectious diseases targeting the vulnerable groups. Accordingly, in this study, when a new infectious disease crisis occurs, the purpose of this study was to identify cases of group infection problems of caregivers living in nursing homes among the disaster vulnerable groups, and to present problems and improvement measures of the response system for group infection of caregivers through the core system. The presenting of the problems through the case of infectious disease response of the vulnerable class living in a nursing facility is meaningful in that it recognizes the dangers of the vulnerable class who are marginalized in the event of a disaster, and suggests safe infectious disease disaster response measures to carers in need.

**Key words:** disaster vulnerable class, infectious disease disaster, disaster response, social distancing, caregiver, nursing facility, group infection, living facility

# A Study on the Utilization of Technology for the Fourth Industrial Revolution to Strengthen National Security

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## Abstract

The development of science and technology led to four industrial revolutions. We are living in the era of the fourth industrial revolution in which the Internet of Things and smartphones became common due to the rapid development of science and technology. This has allowed us to acquire a lot of information with less effort, check large amounts of information at once, combine artificial intelligence, big data, and networks, and predict the future more elaborately than in the past. However, there is a difference between the speed of developing technology and the speed of developing systems and technologies that prevent side effects. In other words, the development of the fourth industrial revolution technology is expected to infringe on personal information and possibly abuse technology. A case in point is the Korean government's K-quarantine, which was spotlighted in the process of dealing with Corona 19, which terrorized the world in 2020, in which it praised quarantine technology using advanced fourth industrial revolution technology, and at the same time, concerns about privacy infringement coexist. So it is true that the policies and means involved are also being studied and developed in many areas. Nevertheless, attempts and means to delve into the weaknesses of information and communications to steal personal and large-scale information are often more dominant than policies and means to protect it. On Oct. 28, 2020, three agencies, including the U.S. intelligence agency, issued a cyber-attack alert by North Korea's Kim Soo-ki. Kim Soo-ki has been using social and scientific methods to access and steal information from individuals who have important information. The review of ways to further promote the benefits of the Fourth Industrial Revolution has been activated and can be easily found. On the contrary, however, the reality is that there is little interest in how to protect personal information security by focusing on its vulnerability. In this paper, we would like to discuss how to respond to the threat of digging into vulnerabilities based on the expansion of personal information utilization and ease of access caused by the Fourth Industrial Revolution. The research method is to check how the scope of personal information utilization is expanded and what means are used through the embodiment of the Fourth Industrial Revolution and analyze the weaknesses in it. Afterward, we will check the attack on the vulnerability and check the response to it together. Through objective analysis of attacks and responses, we would like to draw up supplementary measures and then suggest ways to implement them. In this study, there is a limit to what is directly based on the design of science and technology, so we want to carry out the research through various papers, academic materials, overseas journals, and the latest cybercrime patterns and response techniques.

**Key words:** 4th industrial revolution, national security, IoT, vulnerability

## The Disinfection activities at Incheon in the modern period of Opening port and the present meaning of them

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### Abstract

From the year of 1886 to 1890s, there was Cholera a powerful epidemic at Incheon the famous opening port in Korea. Therefore quarantine for foreign ships was in force at Port Incheon and was installed a special Hospital of infectious disease at Wol-mee islands near the port. Besides of these government action, social isolation movement was quickly executed by the citizen. As a result of these timely activities of quarantine, the transitional system of disinfection in the city was formed. At same time the main group of disinfection was changed from the coercive sanitary police to the village headmen who were the smallest unit of the administrative organization. This change of leading group tells us that the key of successful disinfection depends on citizen participation and on constructing the strong governance of cooperation between the local government and the resident.

**Key words:** Incheon, disinfection, quarantine, isolation, governance

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## Current Status of Youth in Crisis in the 4th Industrial Revolution Era: Focusing on Runaway Youth Prostitution

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### Abstract

Along with the urbanization and industrialization of global neoliberalism, the runaway problem of adolescents is serious due to the increase in social factors such as academic and peer factors and materialism due to the increase in family discord, parental violence and neglect, and the increase in social factors such as school education-oriented entrance examination is becoming. In particular, runaway teenage women are exposed to problems such as domestic violence, sexual violence, and prostitution, and the crisis situation is much more serious and complex. Also, with the development of information and communication technologies such as the Internet and the spread of youth consumption culture, today's youth runaway is showing a new pattern different from the old one. Recently, with the so-called 'Park Sabang Incident', the seriousness of digital youth sexual crimes has been highlighted. It is increasing and even more serious is the fact that the targets of sexual exploitation include children and adolescents. With the development of the 4th industrial revolution, prostitution of children and adolescents using online is continuously increasing. Is also being raised. The purpose of this study is to examine the current status of prostitution among runaway youth and to present a countermeasure for youth crisis management using the 4th industrial revolution technology. In particular, this is a study to prepare a system and countermeasures to prevent and manage the problem of digital prostitution for adolescents, which is a great risk and potential threat to the future digital society, using the 4th Industrial Revolution technology. To this end, this study examined the status of runaway among youths in crisis, especially for runaway youths, and suggested countermeasures for safeguarding by establishing integrated services and social safety nets for runaway youths. In addition, a system for preventing and blocking the inflow of prostitution to prevent runaway adolescents from entering the sex industry in advance and to intervene early in crisis situations by conducting case analysis on the runaway youth experience and the status of prostitution through expert interviews. Various countermeasures were suggested for construction and prevention of cyber prostitution.

**Key words:** juvenile runaway, digital juvenile sex crime, juvenile prostitution, block system establishment

## A Study on the Reorganization of the Legal System for the Overcoming and Revitalization of the Crisis in Urban Industrial Areas

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### Abstract

Unlike industrial complexes where various policy support is provided, this study aims to propose ways to improve the legal system to overcome and revitalize the crisis in urban industrial areas as industrial areas in urban areas are managed only as land use areas and thus are perceived as areas where industrial vitality is reduced and avoided. To this end, this study examined the overseas cases of the U.S., Germany and Japan, which were proactively focusing on establishing strategies to create an ecosystem for manufacturing innovation in the era of the fourth industrial revolution. In addition, the National Land Planning and Utilization Act, a legal system related to Korean industries, analyzed the problems of the system concerning the management and maintenance of industrial areas through the current status of legal consideration and operation, such as limitations on management of land use areas, limitations on application of the Industrial Location and Development Act to industrial areas, and limitations on the application of the Industrial Regeneration Act to urban areas. Based on this, the government intends to establish a framework for the management of urban industrial areas that can lead to regional growth by aggregating the industries and manpower required by the era of the Fourth Industrial Revolution. Due to the absence of basic data on the entire industrial area, it was limited to legal research in the industrial area, and there was a limit to deriving results that reflected regional characteristics by analyzing the actual basic status of the urban industrial area in general. This paper is expected to be used as a basic study for the revitalization of industrial areas by overcoming the industrial crisis in urban industrial areas and improving the relevant laws for systematic management and maintenance.

**Key words:** urban industrial area, the fourth industrial revolution, industrial crisis, management system, policy support

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# The 4th Industrial Revolution and Crisis Management: Preventing Crime and Accidents in the Home

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## Abstract

The purpose of this study is to find preventive measures by analyzing the current status of crimes and accidents occurring in the home in the face of a new crisis called Corona 19 in the era of the Fourth Industrial Revolution. In particular, we compared and analyzed the situation in Mongolia and Korea on crimes and accidents in the home caused by Corona 19, and measures to overcome the crisis were divided into four stages of crisis management: prevention, preparation, response, and recovery. It has been confirmed that crimes and accidents in the home in Mongolia and Korea are increasing due to Corona 19, and the demand for legal systems and technical policies for prevention is increasing. The prevention plan of violence and accidents in the home in Korea is to introduce a prevention system through IoT technology, and the results of reviewing each INSPIRE strategy for the introduction and operational feasibility of such a system are as follows: ① In order to introduce a prevention system, it is necessary to amend the ground laws, ② to improve the awareness of respect for human rights of each family members, ③ to further elaborate the support system for victims of violence and expand budgetary support, ④ make efforts to ensure that partners and caregivers consider each other's family members, ⑤ reinforce the economic power of the family through job placement and support, ⑥ the current system for reporting in case of violence or accidents in the home have to be more elaborated through technology, and make inter-ministerial Task Force(TF) for smooth operation of the system, ⑦ above all, efforts should be made to establish a safer family through education on an awareness improvement on family culture and the risk management in the home.

**Key words:** the fourth industrial revolution, crisis management, domestic violence, safety accidents, prevention systems, internet of things(IoT)

# Research on Chinese Government's Communication in Public Crisis Management in the Era of New Media: A Case Study of COVID-19 Pandemic

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## Abstract

In recent years, the frequency of public crisis events in China has continued to increase. Especially in the era of new media, the public's access to information does not completely rely on the government to release information. At the same time, the government's monitoring of new media has become more difficult, which has weakened the control of public opinion after a crisis. In the process of government public crisis management, a good public crisis communication mechanism is indispensable. Crisis communication is an important part of crisis management. Whether it is information collection before the outbreak of a public crisis, information release after the outbreak of a crisis, or information feedback during the crisis recovery period, crisis communication plays an important role. If the government cannot communicate well with the public, it will cause the prevalence of rumors, which will lead to the continuous deterioration of the incident. The impact on the society cannot be ignored, which will bring more severe challenges to the communication of government's crisis management. Therefore, in the process of public crisis management, how the government keeps pace with the times to grasp the development trend of information dissemination; how to effectively communicate with the public; how to better maintain the image through effective communication, these are issues that the government needs to consider and urgently resolve. This paper focuses on the government's communication with the public in public crisis management. Firstly, it discusses the research background of the government's communication with the public in public crisis management and the current research situation. Secondly, it overviews the concepts of new media, government crisis management and communication in government crisis management. Then it analyzes the current situation of government communication with the public in public crisis management. Meanwhile, takes COVID-19, a major public health crisis, as a case to analyze the communication problems existing in government. Finally, in the context of new media, put forward some suggestions on how to improve the communication between the government and the public in public crisis management.

**Key words:** COVID-19, public crisis, communication in public crisis management



# Utilization Plan of Information Network Technology for Crime Prevention: Centered on Unprovoked Injuries to students by Outsiders

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## Abstract

A school is a place for learning skills, improving quality, teaching and educating people, and a cradle for cultivating future social builders. It should be a pure land. However, we should clearly see that in recent years, cases of infringement on campuses have occurred frequently, seriously disrupting the normal learning and teaching order of schools. Whether in some developed capitalist countries or developing countries, most of them are facing a serious situation of rapid increase in campus crime and rising crime rate. However, campus crime has always been spreading like this, or is it because modern advanced communication technology has enabled us to learn more about campus injuries more quickly and widely? This requires data analysis to help us understand the number of campus injuries and the types of campus injuries. If the development of network technology has allowed us to learn more about campus injuries, can the use of advanced network information technology combined with appropriate policy measures effectively alleviate the occurrence of campus injuries? There are many types of campus injury incidents. This article mainly analyzes the incidents of outsiders entering the school and hurting school students and staff. Firstly, we sort out previous researches and summarize the core parts of previous research. Through data collection and analysis of specific campus injury cases, we can understand the cause and process of campus injury incidents, and finally propose to prevent and reduce the unprovoked entry of outsiders into campus to commit crimes. Effective measures.

**Key words:** information network technology, outsiders, unprovoked crime

## A Study on Overcoming the COVID-19 Policy Finance Crisis through Elements of the 4th Industrial Revolution

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### Abstract

COVID-19(Corona Virus Disease 2019) was officially recognized by the WHO in December 2019 and brought a complex crisis in society, economy, culture, and diplomacy. This study focuses on the economic crisis triggered by COVID-19, and examines the problems of the rapid increase in policy finance to overcome the COVID-19 economic crisis and how all the elements of the 4th Industrial Revolution can be used to overcome the crisis in policy finance. This was examined through interviews between real financial managers such as banks and policy finance managers. As a result of the interview, the supply of policy financing increased by about 4% to 45% for all of the financial institutions, but the rapid increase in policy financing is highly likely to lead to an increase in insolvency and deterioration in profitability due to “very mitigated” credit handling standards. This expresses concern that the increase in policy finance will not be expected to show the effectiveness of quality policy finance equally. In addition, the utilization of the elements of the 4th industrial revolution in the policy finance sector was found to be very insignificant. Artificial intelligence (AI), represented by chatbots, is only used in ‘credit counseling’ and ‘credit reports’. In addition, it was investigated that excessive increase in policy finance would lead to another crisis factor, such as an increase in national debt. It reminds us that effective policy finance allocation is essential, and that all elements of the 4th Industrial Revolution need to be applied to analyze the effectiveness of policy finance. In order to utilize all the elements of the 4th industrial revolution in the policy finance sector, first, it is necessary to distribute policy finance through a big data-based effectiveness simulation through cause-effect analysis. Second, there is a need to expand and develop an artificial intelligence (AI) system that is limited to policy financing counseling and investigations to can review and make decisions. Third, we will have to build a system that maximizes the effectiveness of limited resources by converging and analyzing big data of scattered policy financial institutions into one unified data.

**Key words:** COVID-19, economic crisis, policy finance, in-depth interview

## Suggestion for Suicide Prevention Education in the Era of COVID-19

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### Abstract

After the first outbreak in Wuhan, China in December 2019, the pandemic of Covid-19, a respiratory infection disease that has spread throughout China and around the world, has continued for nearly a year. Covid-19 is affecting our daily lives, and specifically, we are changing, such as the mandatory wearing of indoor masks, restrictions on movement, business restrictions in restaurants, off classes, and working from home. The new term 'corona depression' (blue) has been coined to describe to depression or lethargy caused by these daily changes. Eun-Hwan Lee (2020) also claimed that as a result of analyzing the psychological and mental state of Koreans caused by Covid-19 through a survey, about half of the people are experiencing depression due to Corona-19. Besides, in September 2020, the Ministry of Health and Welfare presented the opinions of experts concerned that the prolonged Covid-19 could deepen social isolation and economic difficulties and lead to an increase in the Risk of Suicide. In this study, after investigating concerns about the increase in suicide in the Covid-19 era, and presenting the limitations of suicide prevention measures due to the prolonged period of Covid-19, centering on the National Action Plan for the Prevention of Suicide, and argue that suicide prevention education should be implemented for an unspecified number of people around multi-use facilities in the post-Corona era.

**Key words:** suicide, suicide prevention education, suicide prevention policy, COVID-19, multi-use facility

## Examining the Performance Measurement Factors Impacting on the Effectiveness of Disaster Management System

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### Abstract

The disasters in modern society have a direct and indirect impact on the nation and the people, causing massive social losses, forcing them to make critical decisions at a time when pressure and considerable uncertainty coexist. Accordingly, the purpose of this study is to analyze the factors that affect the specific response strategy in the event of a disaster, and to establish a horizontal cooperative system to present performance factors that can distribute responsibilities. To that end, keyword network analysis was conducted on the master plan for national safety management to confirm the change in the direction of disaster management policies of the previous and current administrations. Through this, the frequency of the key topics derived and the frequency of the main topics were extracted, as well as the co-occurrence (1-mode) matrix between them. Based on the extracted subject matrix, the centrality of the connections between the subject words was identified, and the cluster analysis was conducted.

**Key words:** disaster management, performance evaluation, performance measurement factor, master plan for national safety management, keyword network analysis

# Human Disasters caused by Human Activities and A Study on the Administrative Response Policy: With Fine Dust and the Administrative Center of Chungbuk

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## Abstract

From December 2019 to the present, we are living in multiple crises such as natural disasters (rainy seasons longer than 54 days) due to the climate crisis, and infections common to infections such as Corona 19. Until now, humans have lived with harmful influences on the natural environment through activities only for economic and population growth. The first industrial revolution achieved mass production and industrialization of steam engines, but in 1952, smog in London caused a lot of damage, and the paradigm of continued economic growth continued to develop without the environment and had a clear influence on accelerating global warming. Are going crazy. The 5th IPCC Report suggested that the impact of humanity on climate change is clear and that rapid determination and response are necessary to reduce the damage of climate change, and the post-2020 new climate system was initiated. As such, human activities are difficult in reality to reduce fine dust in the industrial structure that relies on climate change and excessive fossil fuels, and a time when a lot of research and consideration is needed to lead the resistance and just reduction policies in various industrial fields and vested interests. to be. The frequency of occurrence of fine dust and the number of days of high concentration in Chungcheongbuk-do remain at the highest level in the country, and the industrial complex, which is the cause of fine dust, is saturated (#1 in the country in the designated area of industrial complexes in the first half of 2018, #1 in sales area nationwide, and the increase in sales area compared to the previous year The nation's No. 1), 16% of the nation's incineration volume is operated in Cheongju, the energy independence rate is 3.6%, and it is blocked by the Taebaek and Sobaek mountains to the east. Therefore, the atmosphere is stagnant due to the strong tendency of a dry continental climate with hot summers and cold winters. Due to various factors such as persistence, the generation of fine dust in Chungbuk is continuously intensifying. Therefore, through this study, ① the current status of fine dust in the Chungbuk area ② response policies ③ system status (ordinance enactment, etc.) ④ analysis of citizens' practice activities ⑤ problems and suggestions for research purposes.

**Key words:** human disaster, human activity, fine dusts, administrative response policy

# COVID-19 Infectious Disease Crisis and the Safety Analysis of International Students: Focused on Chinese International Students

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## Abstract

The new type of coronary pneumonia is the fastest and widest disaster in human history. The crisis is profoundly affecting the development process of world politics, economy, and personal safety. China is a country with a large number of overseas students. Currently, there are about 1.4 million Chinese students studying abroad, of which about 100,000 are in South Korea. In December 2019, an unexplained pneumonia epidemic emerged in Wuhan. On January 23, 2020, Wuhan, with a population of more than 10 million, suddenly announced its "closure." Subsequently, the new crown pneumonia epidemic was found to be caused by a new coronavirus SARS-CoV-2 infection, and was named COVID-19 by the World Health Organization (WHO). The Chinese name corresponds to the new coronavirus pneumonia (new crown pneumonia for short). The new crown pneumonia epidemic has a fast spreading speed, a wide range of transmission, a long incubation period, and many asymptomatic infections. So far, it has infected more than 180 countries around the world, and brought immeasurable harm and loss to the health of the world's population and economy. The outbreak of the new crown pneumonia epidemic has had a huge impact on Chinese students: First, the shortage of epidemic prevention materials has caused international students to face safety threats; second, some countries have misunderstood China due to the influence of Western China-related public opinion, making Chinese students more vulnerable Discrimination and unfairness; the third is that many countries have stopped handling immigration services due to the epidemic, causing international students to be stuck in visa matters, and so on. Since the outbreak of the epidemic, the Chinese government has promptly carried out consular protection work for overseas students. However, there are still insufficient consular protection training, low popularity of consular protection information, and insufficient coordination among multiple subjects. This article focuses on the group of Chinese students in South Korea, combined with the crisis of the new crown pneumonia, and focuses on the impact of the new crown pneumonia on the safety of Chinese students. It is hoped that the consular protection training for overseas students can be further strengthened, the work efficiency of the embassy will be improved, the role of international student organizations will be emphasized, and the participation of multiple forces will be promoted.

**Key words:** COVID-19, infectious disease crisis, safety analysis, epidemic prevention

# Evaluation of Underground Inundation Risk Considering Hydraulic Force and Evacuation Route

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## Abstract

Underground space is becoming increasingly vulnerable to inundation owing to the enhanced likelihood and consequences of urban flooding. However, previous studies on flooding of underground space have paid little attention to how rainwater flows inside an underground space, what the optimal escape route might be, how much time would be required to escape, and how dangerous one specific area might be in comparison with another. This study investigated a method for assessing the spatiotemporal risk of flooding of an underground space considering both the flood intensity and the escape route. Two-dimensional hydrodynamic flow analysis was implemented to evaluate the flood intensity. Then, the shortest escape route was determined by applying the Dijkstra algorithm to the nodes and elements used in the 2D flow analysis. In addition, the risk of flooding in the underground space for a case without a water shield was compared with that determined for a case with an installed water shield.

**Key words:** urban flooding, underground space, flood risk, escape, flood intensity, water shield

# The Impact of Big Data Technology on Government Crisis Emergency Management

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## Abstract

The advent of the era of big data has made all kinds of basic data a kind of usable resource. Since the term “big data” first appeared in the Chinese government work report in March 2014, the use of big data to achieve social management innovation has become a hot topic in the society. Compared with the changes that have been achieved in the commercial field, big data will also change and promote the development of China's emergency management system. Applying big data technology, big data thinking, and big data management methods to the field of emergency management, and realizing the innovation of emergency management system is an effective way for Chinese emergency management construction and development under the background of big data. Through the two clues of big data technology and Chinese emergency management, with the help of previous research experience, using this COVID-19 as a research case, the integration of big data and emergency management systems is analyzed and researched.

**Key words:** big data, emergency management, emergency, government, covid-19



# Chinese Government's Response to Internet Public Opinion in Sudden Public Health Crisis: COVID-19 Pandemic Disease

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## Abstract

Internet public opinion is a concentrated reflection of people's emotions in the fight against the epidemic, and plays a vital role in defeating it. This sudden public health crisis is not only a test of China's crisis & emergency management system, but also a challenge to the government's ability to response to internet public opinion during emergencies. The purpose of this paper is to sort out the overall situation of internet public opinion during the COVID-19 epidemic, review the measures and existing problems of the Chinese government in responding to internet public opinion, and provide some countermeasures and suggestions for the government to improve its work. During the COVID-19 epidemic, the government's response to internet public opinion was generally effective. However, at the same time, there are also problems in varying degrees such as untimely response to public opinion in the early stage of the epidemic, imperfect early warning mechanism for internet public opinion, and single feedback channels for internet public opinion information. After analyzing the problems, this paper will provide countermeasures and suggestions from improving public opinion monitoring and early warning mechanisms, innovating public opinion emergency measures, and improving internet public opinion guidance strategies.

**Key words:** COVID-19, internet public opinion, crisis response

## Research on the Government's Quarantine Policy on COVID-19: Focusing on the Impact of Government Quarantine Policies on the Current Status of COVID-19 in Each Country

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### Abstract

COVID-19 is a respiratory infection that spread to China and the world after it first occurred in Wuhan, China in December 19th. There are currently nearly 60 million confirmed cases of infection worldwide. As the northern hemisphere enters winter, the global epidemic of COVID-19 has accelerated, with an average of more than 500,000 newly diagnosed cases worldwide in the past 30 days. COVID-19 is a global public health emergency in recent years. Public health emergencies concern the interests of the people and social development. Therefore, the crisis management that occurred is a major test for government departments. How to improve the government's ability to respond to the crisis transmission of public health emergencies and further do a good job in crisis management is a problem worthy of attention and research. The anti-epidemic policy implemented by the government in the event of an infectious disease disaster is crucial to the development trend of infectious diseases. This is the main reason for this study. From the discovery of COVID-19 in Asia, China and South Korea have gradually stabilized. Europe and the United States have become the epicenter of the epidemic. What kind of epidemic prevention policies have the governments of these countries adopted? Why has the COVID-19 become an epidemic worldwide? Why is the condition of Western European countries becoming more and more serious and South Korea and China remain stable for a long time? The purpose of this study is to understand how important the government's epidemic prevention policy is to epidemic control and development.

**Key words:** quarantine policy, COVID-19, public health, crisis management

# Cognitive Analysis of Infectious Disease Crisis and Epidemic Prevention System

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## Abstract

Human history is also a tragic history of fighting against viruses. The plague caused by viruses once brought sad memories to mankind. Smallpox, polio, fibroids, severe acute respiratory syndrome (SARS), Ebola virus, MERS and other diseases have not gone far. Every year, 291000–646000 people worldwide die from influenza-related respiratory diseases. The diseases and disasters caused by viruses are very close to human beings. Understanding the treatments and mechanisms of viruses helps us understand the facts and respond scientifically. The paper used the questionnaire survey method to analyze the various behavioral mental states shown by COVID-19 from human efforts to prevent and control viruses to the development of the epidemic prevention system, and used the literature reference method to emphasize the importance of the development of the epidemic prevention system and the cultivation of crisis awareness.

**Key words:** cognitive analysis, infectious disease crisis, epidemic prevention system, COVID-19

## The Extinction Crisis?: Spatial Disparities in Population Aging in the Seoul Metropolitan Area

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### Abstract

This paper explores the spatial differences in population aging within the Seoul Metropolitan Area (SMA) in the Republic of Korea (hereafter Korea). Korea is among the most rapidly growing countries in the world in terms of its increasing elderly population. The speed of population aging and demographic decline has been a central issue in the field of urban and regional planning because it is linked to spatial inequalities in socio-economic development. Considering the present importance of understanding population aging, this paper aims to empirically visualize spatial disparities using the old-age dependency ratio, which is measured by the ratio of the elderly population to the working-age population (age 15–64 years old) of one hundred people. For the empirical period examined between 2000 and 2018, we mapped the changing temporal and spatial patterns of the old-age dependency ratio within SMA using spatial analytic tools and cartograms. The visualization reveals that the old-age dependency ratio is relatively high in sparsely-populated rural areas, which underscores the need for further discussion on how to sustainably provide local public services in those areas and manage the pressing issue of population extinction.

**Key words:** population aging, old-age dependency ratio, spatial disparities, geographic information system, cartograms

# An Empirical Analysis on the Safety of Online Reservation Car and Passenger: Safety Management in Yantai, Shandong Province, China

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## Abstract

The purpose of this study is to systematically analyze the status of safety management supervision of online reservation cars in China, find problems, analyze causes, and suggest improvement plans. With the recent popularity of online reservation cars, safety issues, legal conflicts, regulatory issues, and social issues have emerged, and safety risks have also arisen. The main improvement measures in this study are as follows. First, it is necessary to strengthen safety supervision for drivers of online reservations. Second, through the enactment of laws, the government should strengthen the supervision of companies for online reservations. Third, the government should promote the law enforcement of safety supervisors and conduct safety education for passengers, drivers, media, and enforcement officials of online reservation cars. Fourth, safety education and publicity should be conducted regardless of time, place, and environment through new media such as Weibo, WeChat, and video platforms as well as existing media such as television, broadcasting, and newspapers. Fifth, it is necessary to establish an Internet reserved car association to create a path for government management and supervision, and promote the healthy development of the Internet reserved car industry. Sixth, it is necessary to secure safety by establishing standards of the Internet reservation car industry, namely, 'vehicle safety standards,' 'driver's safety standards,' and 'special passengers (pregnant women, passengers with hearing and vision impairments, drinking alcohol, etc.) service standards.

**Key words:** internet reservation car, passenger safety, safety risk, safety management, regulation

## Crisis Management Countermeasures Adopted to Prevent the Collective Spread of COVID-19 Infection: Focused on China

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### Abstract

This paper focuses on China and introduces the current situation of COVID-19, the government and citizens' response methods, preventive measures, existing problems, and applicable measures. Based on previous human research results, this research provides improvement countermeasures for COVID-19 governance and network theory from the perspective of crisis management. The time frame of the research is from December 2019 to present. As the trend of economic globalization sweeping the world intensifies and economic and cultural integration, China, as a responsible major country, also shares risks with other countries. COVID-19 first occurred in China, and it can be seen that the epidemic has been well controlled in China from a global perspective. Therefore, it is very important to study the crisis management measures adopted by China.

**Key words:** COVID-19, crisis management, government, mass infection, infectious disease

# A Study on the Directed Energy Laser Weapon System for the Response of Unmanned Aircraft

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## Abstract

During the Fourth Revolution, the unmanned aerial vehicle sector is not only used for commercial transportation, but also for reconnaissance and attack on battlefield areas. In this era of the fourth revolution, the development of unmanned aircraft is emerging as a new type of threat, and a new concept of air defense response system is needed. Through a comparative analysis, the effectiveness or cost of the response weapon system, management elements, and minimization of combatants were analyzed through the analysis of the limitations of the current response weapon. The development of a new concept of response weapon system requires the establishment of a more efficient air defense system, and the development and necessity of laser weapons, a new concept corresponding to the fourth revolution, were studied. By converting the current anti-aircraft into high-power microwave, high-power electromagnetic waves, and high-energy weapon systems, small unmanned aerial vehicles can be more effective in responding to the development of various types of laser weapons.

**Key words:** in the fourth revolution, the development of small unmanned aerial vehicles, limit analysis of current response weapons, non-lethal weapons systems, development of oriented high-energy laser weapons, and diversification of laser weapons

## Problems and Improvement Plan of Crisis Management Policy in Korea: Focusing on the COVID-19 incident

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### Abstract

The World Health Organization (WHO) declared on March 11 the “Pandemic,” a global pandemic, due to COVID-19 infections that have spread around the world since its first outbreak in Wuhan, China in December 2019. In Korea, the first COVID-19 cases occurred on January 20, 2020. The government has raised the February 23 crisis alert for infectious diseases to the “serious” level after attention, caution and alert levels, operating the Central Disaster and Safety Countermeasures Headquarters and acting as the head of the headquarters by the prime minister. This study analyzed whether there are any problems with the government's crisis management policy of managing COVID-19 infectious diseases through prior research and theoretical consideration of crisis management. Among academic papers and press release materials related to COVID-19 reported in 2020, all data related to the problems and lessons of government policy were analyzed. Theoretical considerations examined the concepts of crisis management and national crisis management, the concepts of infectious disease disasters, what is COVID-19 ? and the current state of government response. Korea is now recognized around the world as one of the most successful countries to respond best to the COVID-19. TIME, a world-renowned weekly magazine, reports that Korea is a successful country in the prevention of COVID-19 while maintaining daily life without taking extreme measures such as urban blockade. Both domestic and foreign countries recognize the success of K-quarantine to a certain extent. However, some crisis management problems were identified in the early policy of COVID-19 infectious diseases. First, the initial blockade failed because Chinese entry control was not imposed in the early stages of the outbreak. Second, after the COVID-19 Pandemics, Infodemics swept social media. So society was confused by the fake news. Third, in the early stages of the COVID-19 response, mask management failed and caused a mask crisis. Fourth, the COVID-19 disaster added to the difficulties of the economically vulnerable. There were unfair parts in the subject and method of the fifth, first and second emergency disaster support funds. Accordingly, this study suggested seven ways to improve infectious diseases in the event of future. First, we should increase the public's confidence in government policies so that they can trust and follow the government. Second, we must thoroughly observe the principles of disaster management communication: speed, openness, integrity and consistency. Third, in the current disaster crisis situation, welfare for the vulnerable should be expanded to share the pain of the weak. Fourth, we must strictly respond to fake news. Fifth, there should be no complaints in the subject and method of allocation of the third emergency disaster support fund. Sixth, cooperation and solidarity with international organizations such as the World Health Organization are essential. Seventh, as the completion of K-quarantine is the development of vaccines and treatments, the government needs to invest actively in securing vaccines and developing treatments. The current crisis is both a crisis and an opportunity to examine and leap forward the government's capabilities. Problems should be corrected properly, focusing on the countermeasures suggested above. It is the supreme duty of the nation to keep the people safe.

**Key words:** COVID-19, infectious disease, infectious disease disaster, crisis management, national crisis management system, lesson of COVID-19



# The Social Impact of the COVID-19 Disaster on Children and Adolescents and Their Families: Changes in Education and Living Environment of Children and Adolescents and Their Families Due to Respiratory Infectious Diseases

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## Abstract

This study analyzed the interactions between children and adolescents and their families in the situation of Corona 19 and the adaptation and overcoming of disasters. The outbreak and pandemic of infectious diseases make people vulnerable and at risk because the cause is uncertain and psychologically difficult to cope with. Children and adolescents' emotional response to COVID-19 and the Ministry of Education postponed the opening of school, resulting in educational imbalances such as online learning and care, academic disparity, and private education, as well as nutritional intake and expenses necessary for growth in a state where meals cannot be provided. It analyzed the burden caused by the conflict and economic gap between adolescents and family members, and looked for ways to support healthy and correct growth of children and adolescents from various angles. From January 1, 2020 to November 14, 2020, 80,697 "corona" and "education" related policy issues introduced in various newspapers and broadcasts were analyzed through the analysis of the policy announcement by the Ministry of Education. First, in the early stages of the coronavirus outbreak, which is an atypical problem, public opinion reacted sensitively to environmental changes, while the government's policy decisions reacted somewhat later. However, it was confirmed that the government's policy response was gradually accelerated as the crisis pattern was repeated, and it was found that the rate of increase in complaints of education victims was slowing. Second, there is growing concern about the education gap deepening in a disaster situation. Various groups including expert groups were actively participating in a variety of ways to close the educational gap. Third, in order to secure the legitimacy of policy decisions, the Ministry of Education's policy announcements were often presented with the opinions of expert groups as the basis for policy decisions. However, this is somewhat insufficient in resolving the actual conflicts and difficulties of parents raising their children, so there is a need to increase the ratio of reflecting the opinions of the actual parties.

**Key words:** COVID-19, children and adolescents, online learning, educational imbalance, economic gap, conflict caused by COVID-19

## The Review of the Government's Response to COVID-19: Focusing on the Intelligence Process

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### Abstract

The purpose of study is to examine the ROK government's response process for COVID-19 in 2020 through an intelligence process, discover problems, and present solutions to them. Through the 5th level of the intelligence process, the Korean government's initial response to COVID-19 and the ongoing crisis management process can be examined. The recommended method of this study is as follows; (1) Information Collection, is collecting the information about COVID-19 abroad and domestically. (2) Information analysis, analyzes the collected information and prepares a way to respond to infectious diseases. (3) Saring Information, is reinforce the reponse to COVID-19 by sharing information between organizations for response. (4) Information disclosure, examines how transparent, accurate and timely public onformation related to COVID-19 is disclosed. (5) Information managenet is continuously updating information and managing it accurately.

**Key words:** COVID-19, intelligence process, infectious disease, crisis management

# Changes in Operational Environment on the Korean Peninsula and Direction of Defense R&D Development

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## Abstract

Recently, the security environment in Northeast Asia has been formed due to the intensifying competition for hegemony between the U.S. and China and the increased armaments of Russia and Japan, and the operational environment on the Korean Peninsula is inevitable to change fundamentally due to the North Korean nuclear threat. Under such a special security situation, the defense acquisition environment for the construction of Korean troops is facing major difficulties due to various factors such as increased costs of acquiring weapons systems and changes in future warfare. Currently, the South Korean military is pushing for defense reform 2.0 to meet the demands of the times, such as deepening uncertainties in security situations in Northeast Asia and the realization of population cliffs, and changing the battlefield environment based on science and technology symbolized by the fourth industrial revolution. Therefore, this study suggested the direction of development of the national defense research and development system to effectively respond to the rapidly changing operational environment on the Korean Peninsula.

**Key words:** defense acquisition environment, military construction, defense reform 2.0, 4th industrial revolution, military innovation

## Relationship between Business Continuity Planning and COVID-19 Response

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### Abstract

The purpose of this research is to suggest the significance of Business Continuity Planning (BCP) to respond the pandemic. COVID-19 pandemic threatens human dignity and causing our mental distress. For overcoming the pandemic, people and government has tried to take all measures for protecting people, activities of company, etc. As the damage of COVID-19 is becoming more severe, the importance of Business Continuity Planning (BCP) to ensure the viability of companies and maintain operations is growing. So, there is an unusual social phenomenon, using more of the non-face-to-face work that's been done before, but has not been common. Even in some sports leagues, such as putting players in one place for several months and running the season. In a world like this where it can be a difficult environment to adapt to. This study reviewed what BCP is, why BCP is needed for COVID-19 responses, what COVID-19 countermeasures are associated with BCP, how effective they are, and what factors should be paid attention and what factors should be to need to establishing BCP.

**Key words:** human dignity, business continuity planning, non-face-to-face work, mental distress, stronger communication

# A Study on the Policy Direction for the Revitalization of Certification System for an Enterprise with Outstanding Performance in Disaster Mitigation by the Establishment of the Continuity of Operation Plan(COOP) of Public Institutions

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## Abstract

The meaning and necessity of the Business Continuity Management System(BCMS) became known in Korea in the wake of the terrorist attacks on the World Trade Center(WTC) on September 11, 2001. In 2004, Korea abolished the Disaster Management Act and enacted the Framework Act on the Management of Disasters and Safety, which was divided into the Ministry of Government Administration and Home Affairs(Social Disaster) and the National Emergency Management Agency(Natural and Human Disaster). Since then, the Act was revised in 2014 and has become the basis for all disaster and safety-related laws. The Act mandates the establishment of a Continuity of operation plan for the disaster management agency. Currently, the public enterprise has added certification to enterprise with outstanding performance in disaster mitigation as additional items in the disaster management field and assessment items in the disaster management field of the disaster management agency. This allows public institutions to replace the obligation to establish Continuity of operation plan with certification of enterprise with outstanding performance in disaster mitigation and encourages certification by giving additional management evaluation points. It is urgent to expand the policy for the settlement of private companies in this certification system. By expanding the start of the public institution-centered certification system for enterprise with outstanding performance in disaster mitigation, the government intends to find the direction of policies for the establishment of autonomous certification of enterprises in accordance with the Act on assistance to Autonomous Activities of Enterprises for Disaster Mitigation.

**Key words:** continuity of operation plan(COOP), business continuity management system(BCMS), mitigation, enterprise with outstanding performance in disaster mitigation, act on assistance to autonomous activities of enterprises for disaster mitigation

## A Study on the Agricultural Reservoir and Its Disaster Management, through 2020 Rainy Season

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### Abstract

In the summer of 2020, rainy season and typhoons came as usual. But the duration and intensity were not the same as in previous years. The rainy season lasted 54 days, the longest ever, and Typhoon Bavi, Maysak and Haishen hit the Korean Peninsula in a row. It is an era of New Normal, that abnormal weather is prevalent, such as the unusually long and strong rainy season. Among them, rural areas are characterized by social, economic and environmental characteristics, resulting in various disasters and crises that are different from cities. However, crisis management and disaster management in rural areas are relatively poor due to efficiency and political influence. Meanwhile, there are various agricultural production infrastructures such as reservoirs, drainage channels, and drainage channels in rural areas. Among them, 3,411 agricultural reservoirs managed by the Korea Rural Community Corporation, 17,240 agricultural reservoirs managed by local governments, 84 percent, or 14,488 of which are aged reservoirs over 50 years. Agricultural reservoirs are cited as the main cause of rural disaster due to aging and difficulty in management. In this background, this study contains the overall management status of agricultural infrastructure represented by Korea's agricultural reservoir and its disaster management. We are going to focus on agricultural reservoirs for the disaster crisis in rural areas, which was seen through record-breaking rainy season and typhoons. In addition, we analyzed the actual loss of embankment cases and examined the measures to strengthen the management of agricultural reservoirs during heavy rains such as rainy season and typhoons. As a way of doing that, first of all, fundamental renovation of old reservoirs should be carried out. Second, reservoir dimensional capacity should be expanded, such as increasing embankment, expanding and installing emergency floodgates. Third, the government should secure discharge capacity, including the installation of emergency floodgates to expand flood control capabilities. Fourth, through enactment and revision of laws and systems, safety management for small reservoirs should be strengthened. Fifth, due to abnormal weather such as torrential rains, large-scale and long-term precipitation is expected, the design standards for agricultural infrastructure such as agricultural reservoirs should be strengthened.

**Key words:** rural area, agricultural infrastructure, agricultural reservoir, rainy season, disaster management

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# Improvement on National Crisis and Emergency Management through a Core System: Lesson of the MERS and COVID-19 Crisis

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## Abstract

The purpose of this study is to seek the problem and improvement on the national crisis and emergency management system in Korea through five major elements of Core System : value, institution, leadership, devotion, and expertise. Based on the lesson of the MERS and COVID-19 Crisis. This article suggests improvements as follows; (①value) Individual autonomy should be implemented based on the value of human respect. (②prevention) Infectious disease-related statutes should be revised and an evaluation system should be properly established. (③preparedness) We should cooperate so that resources can be mobilized in the right place and share the inter-ministerial system. (④response) The government should analyze and judge all the situations. (⑤recovery) The damage should be compensated fairly. (⑥leadership) General authority must be raised. (⑦devotion) The people should cooperate in government policies. (⑧expertise) Experts and specialized facilities should be expanded.

**Key words:** core system, crisis management model, MERS, COVID-19

## Crisis Management and Collaborative Governance of Infectious Diseases in China

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### Abstract

The infectious disease crisis has characteristics such as complexity and uncertainty. Therefore, it is required that all crisis response entities should strengthen cooperation in collaborative governance. Based on this background, this paper aims to provide improvement measures for the collaborative governance of infectious disease crisis management in China by analyzing the collaborative network of Beijing in response to the COVID-19 in Xinfadi markets. For the research purpose, this paper firstly conducts a qualitative study on the current situation of infectious disease crisis management in China through literature analysis and case analysis. Then, the SNA is used to quantitatively analyze the structural characteristics of the collaborative network between different organizations in the infectious disease crisis response, and measures the network density, centrality and cohesive subgroups based on the adjacency matrix.

**Key words:** crisis management, collaborative governance, collaborative network, infectious disease crisis in China, SNA



# A Study on the Changes in Policy after the Focus Event, COVID-19

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## Abstract

This study focuses on COVID-19, which was first reported in China Hubei Province (Uhan) in December 2019. The first confirmed case in South Korea occurred on January 20, 2020. The infectious disease crisis alert was elevated from concern level to caution level. Since then, as the number of confirmed cases continued to increase, the alert level was further elevated. Thus, the case was classified as a focal case. The overall process of political change and shifts occurred from this event was analysed into four stages utilising the Birkland ERPL model. First, the agenda of the focal case became an issue, as the number of confirmed cases increased by the alert levels. Second, with the formation of the Special Committee on COVID-19 Measures of the National Assembly, and the involvement of the Health and Welfare Committee with a group of experts from the government, a collective task force was created. Third, agenda items proposed by special committees, standing committees and subcommittees were discussed. Finally, the National Assembly voted on the amendments. The new amendments were enforced by the government. It was confirmed that COVID cases reported through TV, newspaper and other media sources had a significant impact on policy changes.

**Key words:** corona, COVID-19, coronavirus infection-19, policy changes, policy learning

## Focused on the performance analysis of the Pol-Drone Team of the Chungbuk Provincial Police Agency

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### Abstract

The Korean police used drones to carry out public safety work in earnest after 2020 when they pushed for the introduction of search drones to find missing persons effectively, and the scope of their activities is quite limited. Therefore, many prior studies have not been conducted in conjunction with actual police activities. The research is aimed at analyzing the case of the Chungbuk Provincial Police Agency, which has been organizing and operating the Pol-drone team since June 2018, and establishing a constant support system for missing people, finding policy proposals for improvement. As a result of Pol-drone team's operation, the team reduced personnel and time by more than 30 percent when searching for missing persons. However, the lack of legal, technical, and systematic systems related to the introduction and operation of drones and anti-drones, as well as the lack of equipment and personnel, has led to operational limitations. Policy suggestions to improve these problems include the establishment of clear legal regulations on the introduction and operation of drones into police equipment, expansion of drone utilization scope, adjustment of police drones to the general department, improvement of police drones' performance and safety, expansion of appropriate personnel, and establishment of anti-drone systems.

**Key words:** Chungbuk Police Agency. Pol-Drones Team, police drones, missing persons, anti-drones system

# Patterns of Non-governmental Organization (NGO) Participation in the Management of Major Infective Diseases in China

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## Abstract

The purpose of this article is to promote the participation of non-governmental organizations in the management of major infectious diseases in China. Attempting to analyze and evaluate the management methods, functions, behaviors, and fund operation modes of Chinese NGOs participating in the prevention and control of infectious diseases in China from different levels of theory and empirical analysis: the evaluation and formal judgments of different modes and backgrounds. Government organizations participate in the evaluation of the effectiveness of the prevention and control of major infectious diseases in China. Based on the above research, improve the management model of non-governmental organizations in the prevention and control of major infectious diseases in China, and provide theoretical basis and policy recommendations for relevant Chinese departments to formulate relevant regulations in the field of health. Major infectious diseases in China usually refer to infectious diseases such as AIDS, tuberculosis, viral hepatitis, and covid-19. At present, these diseases have acute morbidity, high mortality, and have a great impact on the social economy in Chinese disease prevention and control. Currently, Chinese NGOs have the following advantages in crisis and emergency management: resource advantages, professional advantages, and coordination advantages. However, it also faces many difficulties: such as low status in crisis and emergency management and limited flexibility; the ability to participate in crisis management needs to be improved, lack of independence and autonomy; the legal system for non-governmental organizations to participate in crisis management is not yet perfect. Among the problems involving NGOs themselves are mainly practical problems such as lack of funds, lack of talents, and chaotic organization and management. The government bears the brunt of the epidemic prevention and control, but this life-and-death fight against the epidemic is also related to the safety of everyone, and every citizen is duty-bound. Therefore, it is necessary to give full attention to social forces, especially non-governmental organizations in the face of sudden public crises. The powerful momentum of the epidemic has promoted the coordinated, efficient, and orderly cooperation of all actors in society in the prevention and control of the epidemic.

**Key words:** NGO, Chinese government, participate, COVID-19

## Empirical Analysis on the Impact of Pension Sharing System on Gray Divorce Rate

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### Abstract

Pension Sharing is a system which split equally the amount of the old-age pension of the former partner corresponding to their duration of marriage and receives it when a couple divorces. Its purpose is to acknowledge joint contribution to the development of their wealth during the period of the marriage, and to give protection from the instability of old-age life that the divorce can cause. The study performed an empirical analysis on the impact of the implementation of pension sharing system on gray divorce rate, using year-on-year panel data from 1997 to 2019. As a result of the comparison between short term and long term impacts using panel ARDL model, although the pension sharing system does not have a significant impact on gray divorce rate in the short term, its impact grows as it becomes long term. It is shown that the most effective way to restrain the growth of the gray divorce rate is to stabilize economic condition.

**Key words:** pension sharing system, gray divorce rate, Panel ARDL, PMG Model, Dynamic Fixed Effect Model

# A Study on the Variables of Learning Agility for Army Officers & NCOs: Focusing on Innovative Behavior That Can Overcome the Crisis of the Future Battlefield

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## Abstract

Learning agility is the ability to learn quickly and flexibly through experiences about changing situations, contributing to the creation of organizational outcomes. Future changes are unpredictable and so are the battlefields of the future. An unpredictable battlefield is like a crisis for army. In order to overcome such a crisis, learning agility to learn quickly from experiences and flexibly apply to changing conditions is required, and learning agility must be achieved by implementing 'innovative behaviors' that implement new ideas to overcome change. At first, I will demonstrate the effect of learning agility on innovation behavior, and later, identify factors that affect learning agility to get implications on how to improve learning agility. This study used the statistical programs SPSS 26 and AMOS 26 programs, and surveyed 425 army officers and NCOs. As a result of the study, learning agility has a positive effect on innovative behavior, and the factors that influence learning agility are in the order of individual characteristics, organization characteristics, and job characteristics. Other implications and future research directions were suggested.

**Key words:** innovative behavior, learning agility, individual characteristics, organization characteristics, job characteristics

## Proceedings of the 21<sup>st</sup> ACC, the 1<sup>st</sup> Crisisonomy Forum, and the 14<sup>th</sup> ICCM (Abstract)

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