

Exploring X-event in the Field of Near-Future Population

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Abstract

There are unimaginable possibilities ahead of us. As a result, it is difficult to predict the future, but the prediction itself is not meaningless. This is because it can have the flexibility to cope with contingencies by predicting various possibilities. This study was conducted to explore extreme events (X-event) in the Korean population sector. To this end, in-depth interviews were conducted with experts from the Korea Army Research Center for Future & Innovation and the Army College, and based on this, significant research results were derived that population problems such as population decline and aging can affect various fields such as economy. With this study, we hope that discussions on extreme events (X-event) that can occur in our society will be further activated.

Keywords: X-event, Korea Army Research Center for Future & Innovation, Army College, Population Cliff & Hyper-aging, Unseen Geography, Super Pandemic, NK Instability Crises

1. INTRODUCTION

Korea's low birth rate and aging population are having a huge negative impact on uncertainty about the future and economic growth. Furthermore, these changes in the demographic structure are leading to an increase in welfare demand and an imbalance in the population. Against this backdrop, Korea's foreign population is expected to grow from the current 3.1 percent to 4.3 percent by 2040, and issues related to the formation of a multicultural society cannot be ignored [1]. In the context of these complex demographic transitions, unexpected extreme events, or 'X-events', may occur. These X-events represent significant and sudden changes that can drastically alter the course of societal development. To fulfill this aim, we conducted in-depth interviews with experts from the Korea Army Research Center for Future & Innovation (KARCFI) and the Army College, specializing in future trends within the military sector. These conversations provided

Manuscript received: May 1, 2023 / revised: May 11, 2023 / accepted: June 5, 2023

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invaluable insights, which are detailed in Chapter 3.

Though there may be apparent gaps in the logical coherence of this study, it is primarily because X-event research is still in its nascent stages within Korea, and thus lacks comprehensive precedents. As a result, to establish a logical framework for examining X-events, we have leveraged expert surveys to derive implications for our research.

2. A Theoretical Study of X-event

The future is a vast landscape of unknown possibilities, rendering it difficult to predict with certainty. Yet, the act of prediction itself is far from futile, as it equips us with the flexibility to navigate unforeseen circumstances by anticipating a range of potential outcomes. Among the possibilities of the future, X-event refers to an event that is difficult to predict and less likely to occur, but once it occurs, it has a tremendous impact.[2] A typical example of this is the 1918 influenza pandemic, which killed about 50 million people worldwide and had a significant impact on the population[3].

Recently, there has been a COVID-19 pandemic that has greatly increased mortality and economic turmoil around the world. As such, X-event is bound to have limited responses because it lacks existing data and cannot estimate the ripple effect [4]. To overcome these limitations, futurists are exploring X-event by applying methodologies such as Scenario Planning [5], Delphi Method [6], and Cross-Impact Analysis [7], and in-depth interview techniques of the KARCFI and the Army Group are applied. Given the relative paucity of preceding studies on X-events within current domestic research, this study strives to establish a foundational basis for future X-event research. By doing so, we aim to pave the way for a deeper and more comprehensive understanding of X-events and their profound implications.

3. X-event Expert Opinion Analysis

For this study, opinions on X-event in the field of population that may occur in the near future were collected from 40 experts from the KARCFI and the Army College. These two institutions were selected as target groups for this study because the Army is conducting future-related research and education. As a result of grouping the meaningful opinions they gave off, four X-events were explored, such as "population reduction and super-aging," "Unseen Geography," "Super Pandemic," and "North Korean instability," as shown in Table 1. Here, 'invisible geography' refers to activities or movements that are not monitored by the government [8].

Table 1. Expert Opinion Grouping

Population Decline and Super-Aging	Unseen Geography
<ul style="list-style-type: none"> - A decrease in military resources, a decrease in the production population - Economic, social, and defense problems emerge due to a sharp drop in fertility rates - The birth rate accelerates to 0.3 percent, accelerated population cliff - Population of the Elderly Surges, Production Age Plunges - Population aging (linked to fertility rate) - Political, Social, and Economic Changes with Aging - South Korea's collapse dominoes due to falling fertility rates - Super-Aging Conflict Occurs - The population imbalance between urban areas and rural areas is getting worse - A decline in fertility due to genetic modification - The collapse of a local university due to a population cliff - Provision of the beginning of war due to lack of military resources - Generalization of Non-marriage due to Middle-class Disruption - A widening gap between generations, opposite sex, and the rich - Intensifying Conflict Between Regions - Deepening Infrastructure Conflict - Facing problems such as pension depletion, old age support costs 	<ul style="list-style-type: none"> - Large scale refugee problem - Illegal influx of immigrants from neighboring countries into South Korea - Threats of terrorism aggravated by the surge in foreign workers (Africa, etc.) - Security instability in the Seoul metropolitan area due to the increase in illegal residents - Security Environment Changes Due to Surge in Illegal Residents - China's Immigration Surges and Terrorism Collapses Liberal Democracy - Conflict between migrant workers and existing Koreans, - Social conflict intensifies and democracy crisis due to the surge in immigrants - Conflict between immigrants and natives - Excessive real estate holdings by immigrants in certain areas - Multipolarization due to differences in values such as mosque architecture - The emergence of robot humans that are indistinguishable from humans - Conflict of religion and values
<p style="text-align: center;">asuperpandemic</p> <ul style="list-style-type: none"> - Deadly Infectious Diseases, Population Plunges - The population of the elderly and infants plunged due to the emergence of the new virus - A new infectious disease (pandemic) occurs due to environmental pollution - Unpredictable pandemics - Changes in population composition due to the outbreak of new infectious diseases - Mass casualties caused by outbreak of infectious diseases in North Korea 	<p style="text-align: center;">North Korea's instability</p> <ul style="list-style-type: none"> - The issue of mass refugees and population integration due to the collapse of North Korea - North Korea's all-out war attack plunges the workforce in their 20s and 50s - Increasing North Korea's population actively embracing change - Local war with North Korea caused massive casualties in the border area

As can be seen in <Table 1>, the X-event that can occur in the population field varies. In addition, looking at the contents of each grouping, it can be seen that the population problem spreads to various fields. Considering these characteristics, the researchers extracted, reorganized, and visualized key keywords for each X-event to see what field each X-event spreads its influence to, and derived the results (radial graph) as shown in <Figure 1>.

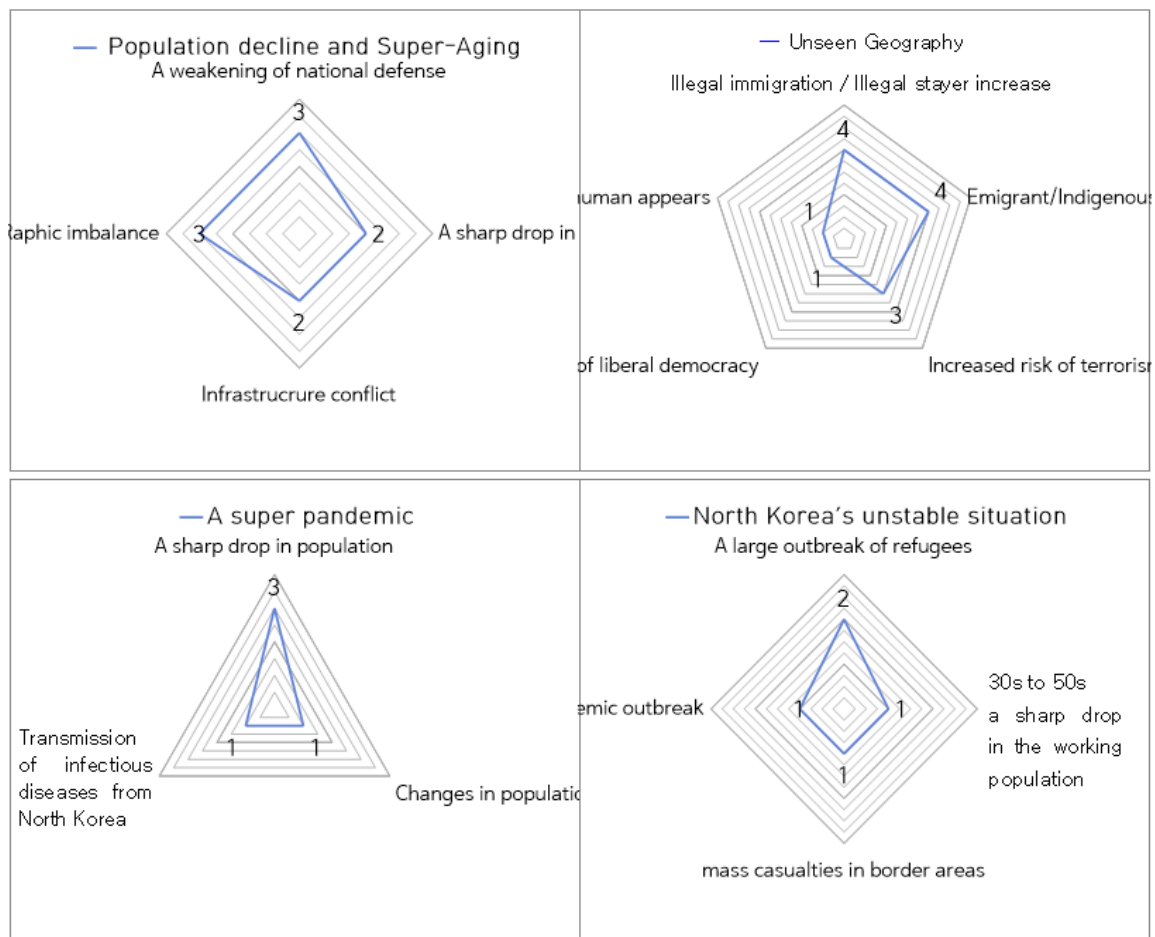


Figure 1. Radial Graph by X-event

4. Conclusion

The expert panel from the KARCFI and the Army College postulated potential eventualities including a "population plunge and super-aging", an "invisible geography", a "super pandemic", and "North Korean instability". Moreover, they introduced novel concepts such as the transmission of infectious diseases from North Korea and the advent of humanoid robotics. Given that so-called "X-events" often manifest in unforeseen areas, the discourse initiated by these experts is decidedly valuable. However, this study presents certain limitations, particularly its reliance on a comparatively small cohort of experts. As a result, it underscores the need for an expanded multidisciplinary dialogue and study into potential X-events within the sphere of population dynamics. Harnessing the collective intelligence of experts across various sectors—including the public sector, government, county, industry, academia, and research institutions—will allow for a more systematic and comprehensive exploration of these potential crises. In the future, we hope that research and discussion on X-event in the field of population, which can cause serious damage to our society, will be activated.

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