

Article

Social impacts of disasters in South Korea: A systematic literature review

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Abstract: Given the increasing frequency and complexity of disasters in South Korea, there is a growing need to strengthen forward-looking and effective disaster management. South Korea has concentrated on managing physical impacts, but disasters can have both physical and social impacts. This research aimed to examine creative and feasible alternatives for addressing the social impacts of disasters in the field of South Korean disaster management. Based on a systematic literature review (to include PRISMA 2020 guidelines) as a major methodology, three periods of social impacts of disasters (as analytical categories) were analyzed by cross-checking three analytical levels (as analytical units): Individual, community, and national, as well as four aspects of social impacts (as analytical units): Psychological hurt, unequal minority, unemployment disadvantages, and political battle. The key theme was that the social impacts of disasters evolved or may evolve into social ignorance (July 1953–May 2004), social complaint (June 2004–April 2014), and social awareness (from May 2014 onwards), in chronological order. This article comprehensively examines the social impacts of disasters on dynamic South Korea, surpassing previous studies.

Keywords: disaster management; physical impacts; social ignorance; social complaint; social awareness

1. Introduction

In the field of disaster (or extraordinary emergency) management, some stakeholders have been trying to find creative problem-solving methods. However, if they simply follow directions from the top, routine alternatives may be repeated, potentially resulting in the same or even more severe human loss, economic damage, and psychological impact [1–3]. Thus, it is inevitable that related stakeholders should rely on creative ways of problem-solving.

Similarly, the field of disaster management needs to depend on probabilistic thinking [4,5]. Many stakeholders in the field are accustomed to utilizing normative judgment to analyze what actions to take or avoid in a potential disaster. If they continue to do so, however, progress in disaster management will be limited. If stakeholders give less consideration to normative judgments, such as being possibilists, they might at least come up with an unanticipated or extraordinary solution for disaster management.

A disaster is not only a natural phenomenon but also a social phenomenon if one considers that disaster management requires complicated interaction between individuals and their environment [6,7]. Hence, an extraordinary emergency must be investigated not only using the traditional approach but also from a social perspective. Therefore, it is significant to change paradigms in disaster management, such as shifting the focus from physical impacts to social impacts [8].

In South Korea (hereinafter Korea), the most common disasters include typhoons, floods, various fires (to include building fires and mountain fires), and industrial

accidents. These disasters have led to both immediate and long-term effects, including infrastructure damage, loss of life, psychological stress, and challenges to sustainable development. Korea has focused heavily on analyzing the physical impacts of extraordinary emergencies throughout its history. However, no distinctive study has been conducted to analyze the social impacts of disasters in Korea [9]. As researchers continue to review the physical impacts of extraordinary emergencies, new alternatives may not be readily available in the near future. Therefore, it is necessary to review the social impacts of disasters in Korea as a major research question, just like this article does. With all of the above in mind, the research question here is: “How has Korea attempted to address the social impacts of disasters?”

Besides, there are some intriguing reasons why the international community is concerned about the problem of social impacts resulting from extraordinary emergencies in Korea. First, no nation is immune to the social impacts of disasters [10]. Hence, the experience of social impacts in Korea will directly or indirectly provide related information and knowledge to other nations. Second, although the lessons from Korea cannot always be applied to other nations with very different environments, other countries may glean from the process of assessing the social impacts of extraordinary emergencies in Korea [11]. Third, the Korean case may improve the level of disaster management in the international community [12]. By studying the inactive status of Korean social impacts, international researchers and practitioners may find new ways and concepts.

The goal of this article is to explore creative and feasible alternatives for addressing the social impacts of disasters in the field of Korean disaster management. These efforts are eventually intended to lessen the number of fatalities, financial losses, and psychological effects that numerous disasters have had in Korea. Three periods of social impacts in Korea are compared initially and systematically such as social ignorance, social complaint, and social awareness. This is achieved by cross-examining three analytical levels: The individual, community, and national levels, as well as four aspects of social impacts: Psychological hurt, unequal minority, unemployment disadvantage, and political battle.

2. Literature review

Disasters cause two kinds of impacts on society: Physical impacts and social impacts. Physical impacts are those that directly result in both human casualties and property damage in society. Social impacts are indirect, meaning they have an invisible effect on society. However, there have been diverse ways of defining the scope of these impacts [13–15]. These ways are the reflection of the unique circumstances of each extraordinary emergency as well as variations in methodological techniques and disciplinary viewpoints.

Several studies have relied on their own classifications of social impacts. One study maintains that social impacts would include six aspects: Psychological hurt, diminished government prestige, regional image, social disorder, decreased emergency awareness, and economic depression [16]. Another study examines four aspects of social impact: Psychological impact, socio-demographic impact, socio-economic impact, and socio-political impact [17].

Regardless of the number of social impacts associated with an extraordinary emergency, it is necessary to follow general criteria when choosing key aspects. The proposed aspects should be relevant to the purpose, significant for disaster mitigation, influential in shaping public policy, and practically implementable [18]. If any criteria are missed, the proposed aspects will not reflect every feature of the social impact. Therefore, to guarantee both analytical rigor and practical application, a methodical and balanced selection process is crucial.

Addressing the social impacts of extraordinary emergencies is significant because these impacts can lead to critical long-term problems in society. By understanding the social impacts of extraordinary emergencies, society can formulate the basis of disaster management to mitigate human casualties and property damage [19–21]. In other words, to mitigate the physical impacts of extraordinary emergencies, it is equally important to embody social impact as it is to grasp the physical impact itself in society. Incomplete responses that ignore underlying societal vulnerabilities and recovery needs may arise from disaster management tactics that fail to take social impacts into account.

Some scholars have studied the importance of the social impacts of extraordinary emergencies in the international community, including individual trauma, gender and sexuality, housing, community corrosion, social capital, and community leadership [22–24]. In particular, they have focused on studying how to assess social impacts by proposing related models and have complemented their achievements. Other scholars, however, have emphasized that the aforementioned studies are not quite enough because the social aspects have not been well elaborated in such studies [25]. These scholars point out that those studies fail to reveal the complex dynamics of social impacts.

For instance, according to the United Nations Office for Disaster Risk Reduction (UNDRR), contemporary disasters are becoming more complex and socially motivated, necessitating a “all-of-society approach” [26]. Disaster risk reduction plans must systematically incorporate elements including age, gender, disability, and socioeconomic position, according to UNDRR, which highlights how social inequality, vulnerability, and inclusion significantly influence disaster risk. Crucially, UNDRR demonstrates that the global community is shifting toward disaggregated data in order to better understand who is most impacted, highlighting the importance of social consequences in efficient disaster management.

Gonzalez Garcia et al.’s research has indirectly addressed how disasters affect individuals, society, their causes, and solutions [27]. Individuals are greatly impacted by disasters, which can result in physical injuries, psychological distress, and interruptions to day-to-day activities. Socially, they worsen community cohesion and raise poverty. These effects are frequently caused by a lack of resources, societal injustices, and inadequate preparedness for disasters. Community-based initiatives, social safety nets, mental health assistance, and fair resource distribution are all effective remedies.

In Korea, many academic areas, such as firefighting science, civil engineering, public administration, laws, environmental science, and liberal arts, have delved into the importance of the physical impacts of extraordinary emergencies [28,29]. Although a limited number of scholars have started to show interest in studying the

social impacts of extraordinary emergencies, their work has not been systematic, as indicated by **Table 1**. Overall, the 0 % ratio on KISS draws attention to issues with the digitalization and indexing of older literature as well as the historical underrepresentation of social impact research in Korean disaster studies. It also implies that in order to fully capture the range of disaster impacts in Korea, future research must embrace more interdisciplinary and socially focused frameworks. To that end, this paper, which is a pioneering study, aims to analyze the social impacts in Korea in greater detail than any other research in the field. Thus, it is quite valuable to conduct research on the social impacts of extraordinary emergencies for the benefit of Korea.

Table 1. Number of electronically publicized articles on the social impacts of disasters in Korea (written in Korean) [30].

Number of electronic articles on disasters on the KISS website	Number of electronic articles that partially describe the social impacts of disasters on the KISS website (ratio)	Number of electronic articles that focus on the social impacts of disasters on the KISS website (ratio)
2471 (100 %)	34 (0.014 %)	0(0 %)

As a similar token, the Korean case on the social impacts of extraordinary emergencies is worth reading, mainly because of the unique dynamics of Korean disaster management. Although Korea has been classified as a developed nation in terms of its national economy, the social impacts of extraordinary emergencies in Korea are not significant. Nonetheless, the people's demand for reform in disaster management, including its social impacts, has finally begun to be addressed through the use of cutting-edge information technology [31]. Thus, how Korea will manage the social impacts of extraordinary emergencies through this kind of dynamics is worth watching.

Failing to address the social impacts of extraordinary emergencies in Korea will only lead to a continuous cycle of disasters in the country. Many substantial examples are available in both developed and developing nations [32,33]. The failure to understand the social impacts of disasters lead to flawed decisions in disaster management. This will lead to an increase in the risk of extraordinary emergencies due to economic damage, psychological impact, and other invisible damages, as well as human loss and casualties.

3. Research methods

The major methodology adopted in this paper is a systematic literature review. To analyze the social impacts of extraordinary emergencies, a broad range of literature was identified, analyzed, interpreted, and recorded [34], incorporating both international and Korean sources. The research materials were accessed through various platforms such as KISS website, ScienceDirect, EBSCO, Oxford University Press, ProQuest, SCOPUS, and Google Scholar, among many others. In doing so, this study has conducted the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 checklist and flow chart (please refer to Data availability statement).

To further explain, a systematic literature review has contributed to the selection of pertinent texts and the flexible interpretation of those materials [35]. Whether an English text document contains appropriate content on social impacts, disaster management, and national policy has been a key eligibility factor (or a major inclusion/exclusion criterion) in determining whether to include or exclude it. In some cases, Korean-language websites have been included such as KISS and official government portals. Considering that this study discusses catastrophe history, the third eligibility factor has been choosing research papers from a range of publication years (i.e., from 1991 to 2026). As a result, 77 texts have been included into this study such as 60 research articles, 8 books, 2 government document, 1 conference proceeding, 1 doctoral dissertation, and 5 major websites.

For this study, it has been both necessary and deliberate to include texts from well-known websites [36]. The current study examines the social impacts of disasters, which are frequently recorded not just in scholarly publications but also in real-time reporting, governmental portals, policy briefs, and institutional communications. In contrast, systematic reviews typically prioritize peer-reviewed literature. Such social factors are frequently underrepresented in indexed publications, especially in the Korean setting. As a result, major websites are crucial supplementary sources for this research.

In the meantime, the Cochrane risk of bias tool has been used to assess the methodological quality and potential biases of the included studies [37]. Analytical framework, sample techniques, measurement validity, and reporting completeness have been all taken into account in this evaluation. Studies have been classified as having a low, moderate, or high risk of bias based on these criteria. This assessment has guided the synthesis of text data to ensure that conclusions are supported by solid evidence.

To periodize the social impacts of extraordinary emergencies in the field of disaster management, this paper considered many Korean disasters. Examples include the Korean War, the collapse of the Sampoong Department Store in 1995, the outbreak of coronavirus disease 2019 (COVID-19), Itaewon crowd crush in 2022, bird strike on an airplane in 2024, and others [38,39]. Hence, Korean history, from the viewpoint of social impacts, is divided into three periods: From 27 July 1953 to 31 May 2004 (social ignorance); from 1 June 2004 to 16 April 2014 (social complaint); and from May (or 17 April), 2014 onwards (social awareness) (**Figure 1**).

To elaborate, the Korean War (the first period), considered a significant milestone, ended on 27 July 1953, and marked the beginning of national industrialization in Korea [40]. The National Emergency Management Agency (NEMA) (the second period) was established as a single comprehensive agency on 1 June 2004 [41]. On 16 April 2014, the ferry Sewol capsized (the third period). Only 172 out of 476 people aboard were rescued [42,43].

Three analytical levels—individual, community, and national—are used to methodically examine the three periods of social impacts. These three levels are representative of all analytical levels in disaster management, albeit they may be categorized based on personal criteria [44,45]. Researchers and practitioners can find patterns of vulnerability and resilience that are essential for creating efficient disaster management by comprehending societal repercussions at all of these levels [46].

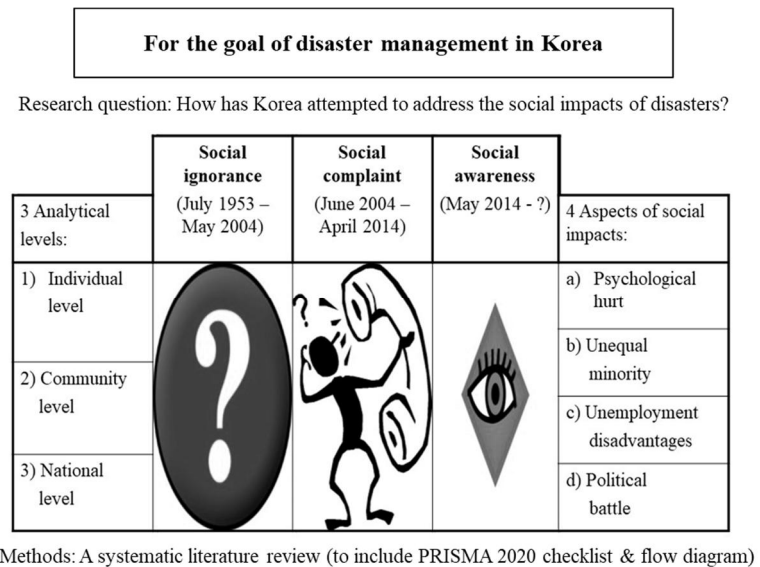


Figure 1. Analytical structure on three periods of social impacts.

To thoroughly examine each analytical level in the three periods of social impacts, the levels are studied in terms of four major aspects of the social impacts of disasters: a) psychological hurt, b) unequal minority, c) unemployment disadvantage, and d) political battle [47,48]. The distinct Korean context as well as international criteria served as the basis for the provision of these four aspects. Shortly, these elements were quickly modified to consider both pragmatic issues and subtle cultural differences unique to Korea.

For text analysis, valuable information has been taken out of each identified text and arranged into above three analytical levels and four aspects of social impacts. In order to give a thorough account of the history of the Korean tragedy, text synthesis has integrated qualitative results and tracked three periods of social impacts [49]. Throughout the review, a number of techniques have been used to reduce the possibility of bias. For instances, the analytical framework was revised on a regular basis to take into account new data and methodological developments. The results were all specified in the eligibility criteria, which were uniformly applied. Transparent reporting of analytical results included awareness of limitations and heterogeneity as well as clear connections between evidence and findings. These steps improved the dependability of the synthesized evidence and secured the methodological rigor of the review [50].

4. Results

4.1. Social ignorance from July 1953 to May 2004

4.1.1 Individual level

After experiencing extraordinary emergencies during this period, individuals instinctively tried to recover from the psychological aftermath [51]. In general, individuals could not even consider receiving systematic psychological treatment from accredited institutions, as it was not available at that time. When minority individuals,

such as women, children, and the elderly or disabled, received unequal treatment during disaster management, they thought that it was their destiny.

Some individuals tried to secure employment in the field of disaster management by leveraging their nepotistic connections [52]. Among them, serving or former soldiers could find employment opportunities in the field, partially because of the potential threat from North Korea. Similarly, many individuals were willing to apply to military schools in order to become soldiers. As a result, many individual soldiers were able to secure important positions by winning an ugly political battle.

4.1.2. Community level

The community could not consider the importance of psychological harm or related treatment in an extraordinary emergency. Rather, the headmaster of the community ordered the holding of a superstitious ceremony to overcome an extraordinary emergency that was based on traditional belief [53]. Although the community instinctively took more care of women, children, and the elderly during an extraordinary emergency, it did not pay equal attention to disabled persons. The community thought that disabled people were cursed by the gods [54].

Civil defense was considered the biggest part of disaster management. Although firefighters played many substantial roles in dealing with fires and civil engineers tried to combat floods accompanied by typhoons, their status was inferior to that of soldiers [55]. By engaging in political battles against soldiers, other professionals tried to secure their survival in a competitive environment.

4.1.3. National level

Korea was ignorant of the significance of psychological hurt [56]. Hospitals provided psychiatric treatment for patients, but many patients were unwilling to avail themselves of it. The minority had their voice, but it was too small in the field of disaster management [57]. The central government preferred a growth-oriented policy over an equity-oriented policy. Therefore, the related public policy did not pay attention to caring for the minority during an extraordinary emergency.

It is easy to guess why soldiers occupied almost every post in the government, including roles in civil defense or disaster management. However, with the rise of the democratization movement, a few civilians began to work in disaster management, but their numbers were limited. There was a political battle between soldiers and other professionals in the field of disaster management. Soldiers were often winners. Thus, other professionals began to play their own game for political purposes [58].

4.2. Social complaints from June 2004 to April 2014

4.2.1. Individual level

After the establishment of NEMA, many individuals started to express their psychological hurt to others, including public institutions, before, during, and after an extraordinary emergency [59]. The scope of minority individuals was expanded to include not only women, children, the elderly, and disabled persons but also foreign-born individuals from minority backgrounds.

Two kinds of individuals mainly enjoyed employment advantages in the field of disaster management: Firefighters and civil engineers. Other professionals did not

have an equal opportunity to be employed in the field [60]. A political battle existed among individuals who were emotionally invested in the field. For example, some firefighters fiercely competed with civil engineers. Each individual believed that the other individual might take away his or her vested rights.

4.2.2. Community level

Headmasters knew that superstitious practices would not be effective for psychological hurt, so they excluded superstitious rituals from public events held in their communities [61]. Instead, many local residents were willing to express their psychological hurt via public means. The community provided support to women, children, and the elderly during an extraordinary emergency, while the foreign-born minority cooperated with each other as a group and thus, they seriously pointed out the unfairness in disaster management.

Three noteworthy jobs were available in the field of disaster management: Firefighters, civil engineers, and police officers. However, firefighters and civil engineers formed the major workforce in the field. Due to a shortage of personnel, the police did not play many roles in managing extraordinary emergencies apart from handling terrorism [62]. There were two kinds of political battles in the community. One was a political battle between firefighters and civil engineers. The other was a political battle between firefighters and police officers.

4.2.3. National level

Some psychology scholars and non-governmental organizations began to support the importance of emergency psychology at the national level. However, their activities were still at the initial level [63]. No minority group successfully took part in the central government's disaster management planning. Thus, the minority came to verbalize their complaints against the government's policy.

Mainly firefighters and civil engineers were allowed to work in the field of disaster management. Other professionals informally pointed out unemployment disadvantages, but only at the central government level. The political battle between firefighters and civil engineers at the central government level was serious [64]. Regardless of his or her capacity, the director of NEMA was chosen from either the firefighters or the civil engineers in alternating turns.

4.3. Social awareness from May 2014

4.3.1. Individual level

To decrease psychological hurt, individuals have to be aware that they have to take care of their own disasters. For that, they have to be more active by voluntarily resorting to the means available, such as support from accredited institutions, experts, and related information [65]. To increase their awareness of inequality, individual members will talk to close friends or members of their family regarding their poor conditions during an extraordinary emergency. They will set up their own emergency operation plans (EOP).

It is difficult for individuals to directly fight against government bureaucracy in order to overcome their unemployment disadvantages. It is better if they do something practical at the individual level. Each individual firefighter and civil engineer must be

aware that his or her vested interests in the field of disaster management will not be taken away by others [66]. Rather, the others will contribute to disaster mitigation.

4.3.2. Community level

It is time for each community to substantially approach the emergency psychology of residents. By providing emergency psychology classes, seminars, and other related activities at community centers, the community will play a vital role in managing psychological hurt [67]. The community will utilize both formal (e.g., the community website) and informal (e.g., initiatives of community-based organizations) relationships to improve the status of the unequal minority.

As long as employment advantages are given to firefighters and civil engineers, each community will not be able to improve its future economy innovatively. By employing diverse workforces, it is certain that economic breakthroughs will be achieved. The community may encounter extraordinary alternatives for disaster management by encouraging all professionals to attend joint seminars or conferences or by setting up a joint network among them [68].

4.3.3. National level

The central government (i.e., Ministry of the Interior and Safety) in Korea needs to implement a strategy to deal with the psychological well-being of its citizens during extraordinary emergencies. This can be achieved by providing comprehensive psychological management plans, mental health guidelines, and training programs for psychological resilience. The central government will continue to include all minority groups in the national EOPs [69]. National EOPs may equally differentiate the alternatives between the majority and the minority.

Future presidents must reform the current personnel administration by equally employing all kinds of professionals for the purpose of comprehensive disaster management [70]. Similarly, the current or future president will play a key role in mitigating the political battle between firefighters and civil engineers. It is not too late for the current administration to address the problem that has resulted in complicated and stiff politics [71].

5. Discussion

Korea has been striving to implement modern disaster management for the past twenty-one years. However, as long as the stakeholders focus solely on addressing the physical impacts of extraordinary emergencies, they will not explore creative or possible alternatives [72]. Hence, it is the right time for Korea to seriously approach the social impacts of extraordinary emergencies. Such a move will historically lead to a paradigm shift toward much more effective disaster management.

Reminding the research question “How has Korea attempted to address the social impacts of disasters?” the biggest finding is that the three periods of social impacts have been or will be categorized as follows: Social ignorance from July 1953 to May 2004, social complaint from June 2004 to April 2014, and social awareness from May 2014 onwards. Just after the Korean War in 1953, Korea was almost ignorant of the social impacts of extraordinary emergencies at every analytical level. Since the establishment of NEMA in 2004, Korea has begun to express its complaints about the

poor social impacts of extraordinary emergencies via diverse means. In the near future, the current or next president will need to increase social awareness regarding the poor status of social impacts, offering new alternatives.

The findings show that the social effects of disasters in Korea have surely changed over time, moving from social ignorance to social complaint and, more recently, to social awareness. While the early stages of ignorance are consistent with earlier research that highlight minimal public engagement and poor institutional capability [73], the phase of social complaint shows growing unhappiness and calls for responsibility after significant disasters [74]. Findings highlighting the importance of education, communication, and participatory approaches in promoting proactive society responses are reflected in the rise of social awareness [75]. These findings imply that in order to improve readiness and resilience, Korean initiatives must take into account the constant growth of societal perceptions.

When Korea does work on social impacts via psychological hurt, unequal minorities, unemployment disadvantages, and political battles, it can contribute to the goal of disaster management. The individual's ability to cope with disasters will be improved, while cooperation among stakeholders and coordination on thorny issues will be efficiently provided at the community level [76]. Moreover, Korea will better prepare for extraordinary emergencies at the national level. Overall, this may mitigate human casualties and minimize economic losses at all levels of disaster management.

If Korea does not equally emphasize the social impacts of extraordinary emergencies in the field of disaster management, stakeholders will face huge potential difficulty in assessing the impacts of extraordinary emergencies. In particular, decision-makers may make flawed decisions when they are not provided with a complete operational picture of disaster management. This lack of information can result in a failure to consider the social impacts of extraordinary emergencies. As a result, Korea will not be able to productively tackle human loss and economic damage and, more importantly, address the social impacts of extraordinary emergencies.

Significantly, this paper proposes an analytical framework to deal with the social impacts of extraordinary emergencies in Korea. So far, no distinctive research has been conducted on the social impacts of extraordinary emergencies. Related stakeholders in Korea have not been able to initiate an approach to the issue. This paper fills that gap and contributes to the expansion of social impacts in the field of disaster management.

Similarly, the attempt of this paper is valuable as pioneering research because it focuses on how Korea has dealt with the social impacts of extraordinary emergencies. A significant gap exists between the reality of politicians' public policy and the extent of the people's demand for reforming disaster management [77]. Because of the unique dynamics of disaster management, this study is worth reading.

6. Conclusions

The purpose of the article was to carefully explore creative and feasible alternatives for addressing the social impacts of disasters in the field of Korean disaster management. The study systematically compares three periods by cross-investigating three analytical levels: The individual, community, and national levels, and four

aspects of social impacts: Psychological hurt, unequal minority, unemployment disadvantages, and political battle. Considering all of the above, this study has successfully achieved its original objective.

The primary focus of this study has been on three stages of Korean disaster management: Social ignorance, social complaint, and social awareness, in that sequence. To the token, stakeholders must add social ignorance and social complaint to the social awareness phase, which is based on two earlier phases. The phase of social awareness for the nation would not be adequately handled if it did not fully rely on historical experiences. To put it briefly, deepening this developing stage of social awareness requires a consistent and methodical integration of lessons learnt from prior experiences.

When admitting that this paper relies solely on a systematic literature review as a major methodology, the lack of empirical data may be seen as a limitation. Many studies in the field of disaster management have been inherently subjective without an empirical method to measure findings. Although bias has affected all research, whether deliberate or inadvertent, numbers offer quantifiable information. Without exception, this pioneering study will be challenged by related criticism.

It will be necessary for researchers around Korea and related fields to redirect their research interests toward studying the social impacts of extraordinary emergencies in greater detail. For example, they may focus on probing each aspect of social impacts, including emergency psychology, minority status, socio-economics, and politics. At the same time, they may initiate studies by utilizing the analytical structure provided here. Additionally, when addressing a limitation of this work, the researchers will approach the problem of social impacts by fully applying empirical methods. Longitudinal surveys that monitor how social impacts alter over the course of a disaster and in-depth qualitative case studies that examine the institutional, psychological, and cultural factors influencing these shifts should be given top priority in future study. Comparative cross-national and mixed-methods research are also crucial for extrapolating results in various contexts. In one way or another, every effort will help international disaster management achieve its objectives.

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