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Integrating the resources of Korean disaster management research via the Johari window

Kyoo-Man Ha

Department of Public Policy and Management, Pusan National University, 2 Buandan-dong 63beon-gil, Geumjeong-gu, Busan, 46241, South Korea

ARTICLE INFO

Keywords:
Impact assessment
Korean-speaking researchers
English-speaking researchers
Electronic research resources
Integrated research resources

ABSTRACT

It is not widely known that quite a few researchers are faced with difficulties in using various resources of disaster management research in Korea. The article aims to assess how rigorously the Korean field of disaster management research resources has been managed or how it can be improved for the ultimate goal of disaster management. Descriptive content analysis has been used as the major methodology by referring to the Johari window. In doing so, electronic research resources have been systematically compared with integrated research resources via the perspective of Korean-speaking researchers and that of English-speaking researchers. The conclusion is that two researchers have to be integrated with all four research resources (open, blind, hidden, and unknown resources) by implementing assigned responsibilities as well as freely asking questions. Ultimately, this will be conducive to reducing down the impacts of disaster in Korea.

1. Introduction

South Korea (hereinafter Korea) has continually been hit not only by natural disasters but also by man-made emergencies (on that point, this article covers all kinds of disaster). Sample disasters include the collapse of Sampoong department store in 1995, typhoon Maemi in 2003, the sinking of ferry Sewol in 2014, the outbreak of Middle-East Respiratory Syndrome (MERS) in 2015, Gyeongju earthquakes in 2016, Miryang fires in 2018, the chronological outbreak of avian influenza and foot-and-mouth disease, and others (Ministry of Interior & Safety (MOIS), 2019). Due to the many occurrences of disasters, the people asked the government to take progressive actions, but its policy was incomplete because of many factors, including the lack of disaster awareness, poor level of scientific research, lack of appropriate education, and lack of efficient government efforts.

As a policy tool, impact assessment deals with evaluating or assessing the consequences of various environmental or disaster programs (Durning, 2014; Morgan, 2012). With impact assessment, there is a need to identify the critical impacts of certain programs and then provide alternatives to reduce these impacts. In the field of disaster management research, impact assessment may improve the effectiveness of disaster management.

Disasters cause not only human loss and economic damages but also psychological impacts to human society. Many researchers have also studied such impacts. However, with much more complex issues of disasters or disaster management, several complicated questions remain unanswered (Benight & McFarlane, 2007). Indeed, more sophisticated and in-depth researches on disaster management are urgently needed.

To illustrate, there are some researchers who concentrate on a single resource in a particular topic. Other researchers also fail to access research resources in a timely manner. In the case of disaster management, availability of integrated resources and timely access are of the same importance, given the need for organized action and quick response when it comes to curtailing the impact of disasters (Alamdar, Kalantari, & Rajabifard, 2016; Srinivasan et al., 2007).

Despite the availability of diverse research resources in the Internet, many researchers continue to encounter difficulties in using and making them more useful in their works (Scott & Few, 2016). In many cases, this is also the experience in the field of Korean disaster management. This raises the question: How can the integration of research resources on disaster management be improved to benefit not only Korea but also the international community?

This article aims to assess the state of integration of Korean disaster management research resources. Descriptive content analysis was used to compare resources with the viewpoints of Korean-speaking researchers and English-speaking researchers using the Johari window. Electronic research resources refer to materials available in computers or via the Internet that may be structured, but not necessarily coherent. Integrated research resources are not only available electronically; they are also structured, organized, and maintained in a system that allows them to be searched and used significantly. The key is the need for transformation to be in an integrated setup or platform for both Korean-
speaking researchers and English-speaking researchers.

2. Literature review

In 1955, researchers Joseph Luft and Harrington Ingham developed the Johari window (named after them) (Clayton, 2008). It is a tool used to help assess self-awareness and understanding, while observing multiple relationships between the self and others.

Many internationally known researchers have discussed the issue of research in the field of disaster management. At the same time, some researchers have applied the concept of the Johari window to their disaster management research (Lander & Atkinson-Grosjean, 2011). However, based on the literature review, not many international researchers have made the same efforts to systematically assess the Korean disaster management research or the Johari window in the Korean context.

The Johari window has four behavioral areas, specifically, open, blind, hidden, and unknown. The use of this technique plays a role in setting up goals, improving critical thinking, studying prejudices, identifying all elements or personal boundaries, and developing relationships. By analyzing the four areas, concerned individuals can improve their knowledge and information through an appropriate assessment (South, 2007).

Research, to include not only research itself but also its development, has played many roles in supporting disaster management. Throughout the life cycle of disaster management, namely, disaster prevention/mitigation, preparedness, response, and recovery, research has contributed in mitigating the loss of human lives, economic damages, and psychological impact in the international community. Although invention or use of cutting-edge technologies or new theories continues, research has changed how the field of disaster management operates (King, Edwards, Watling, & Hair, 2019).

Surely, research has many resources, depending on an individual’s perspective. As an example, disaster management research may have two resources, namely, primary resources and secondary resources (University of Maryland University College (UMUC), 2011). Primary resources as original materials include raw data, survey and interview results, official documents, and other firsthand accounts. On the other hand, secondary resources as secondary materials include assessments, syntheses, discussions, and others.

Although disaster management research consists of many sub-areas, each sub-area has its own characteristics (Xu, Wang, Shen, Quyang, & Tu, 2016). For example, research on natural disaster as a sub-area has not adequately predicted disaster victims’ psychological change, as the field has not provided enough amount of pre-disaster data or related statistical analysis (Green, Lowe, & Rhodes, 2012). Although this may depend on the type of natural disaster, research on natural disaster has relied so much on victims’ post-disaster data.

In general, disaster management research has more noteworthy characteristics, as compared with other academic researches. Similar to the thought that a disaster may be efficiently managed by multiple professionals or complicated knowledge, related research is also a sort of multidisciplinary one. Also, the contents of disaster management research are specific and thus may be applicable to concrete cases. By using common and basic terminologies, disaster management research allows ordinary citizens to understand the research results.

Disaster management needs organized and quick action, especially in the case of researching and developing vaccines, such as with MERS, Ebola, and H1N1 virus (Callaghan, 2016). Without timely resolution, the adverse impacts of pandemic outbreaks may be serious and damaging.

In disaster management, integration does not only concern uniting data resources but also stakeholders, methodologies, disciplines, etc. (Ye, Browne, Grdisa, Beyene, & Thabane, 2012). Integration is also about highly coordinated and collaborative networks available to extend services toward effective disaster management.

Integrated disaster management research was strongly vindicated for the past 15 or 20 years in the international community, mainly because disaster has a complex structure, wherein one or two experts alone may not be enough to easily solve or handle disaster management. However, the majority of integrated research was carried out by European researchers or North American researchers concerning their own topics or fields of interest. Surprisingly, even though they maintained their achievement on their own integrated research, some critics raised questions on whether related research was indeed performed or not (Gall, Nguyen, & Cutter, 2015).

Like disaster management research in many countries, the Korean field of disaster management research has a wide scope. It is surrounded by unique management styles, cultures, or other environments. Furthermore, the Korean field includes many international principles on disaster management, considering that it has started to associate itself with the international community.

If the Korean research field fails to assess or use the networks of all disaster management research resources, it may not smoothly suggest appropriate alternatives not only for decision-makers but also for disaster victims. Alternatively, without the help of self-assessment via the Johari perspective, the adverse impacts of disasters would not be mitigated in Korea.

Integration of all research resources relative to disaster management is imperative. Doing so may help lessen or address the potential ripple effects of disasters. Using the Johari window as an assessment tool will aid in achieving this integration goal (Hills, 1998).

An increasing number of Korean researchers have examined disaster management in Korea. However, not many Korean researchers have studied the issue of disaster management research. Furthermore, no rigorous study has ever been attempted to assess or evaluate disaster management research or its resources in terms of the Johari window (National Disaster Management Institute (NDMI), 2015). Therefore, the goal of this article has potential value to the study.

3. Method

Descriptive content analysis was the methodology used for this study, as it has been considered as one of the most effective tools in analyzing the important features of Korean disaster management research resources and evaluating not only the tangible effects of research resources but also their intangible effects (FenRIAM, 2019; Vo, 2013). The procedure of descriptive content analysis includes four steps: defining a research question, identifying information and data, reviewing collected information and data, and documenting a descriptive summary (Bengtsson, 2016). In short, descriptive content analysis plays a role in assessing the significant characteristics of disaster management research resources by describing the outcomes of disaster management research resources.

Meanwhile, relevant subjects and texts were identified, collected, and then interpreted for the research. For information and data identification, some terms (e.g., Johari window, principles of disaster management, science and technology policy, Korean disaster management, etc.) were searched in widely used search engines, such as ScienceDirect, EBSCO, Google.com, Oxford University Press, Korean search engines, etc.

Moreover, the author performed subjective assessment to qualify the identified materials and resources. Primarily, as the Johari window was proposed about 65 years ago, not many researchers have discussed related issues in the 21st century. Thus, the author identified or included as many articles or documents as possible on the Johari window into the references or resources for analyzed texts. In general, the majority of identified or collected references were labeled as favorites as shown in the results of the article.

Using impact assessment, this article assesses (or evaluates) how the Korean field of disaster management research has been doing with its resources and what the field should do to improve the current situation
and establish appropriate alternatives. In the process, the article analyzes all the resources of Korean disaster management research using the Johari perspective, with the goal of naming a current model and an alternative model on disaster management research resources.

Similarly, this research has shown a comparative perspective between Korean-speaking researchers and English-speaking researchers regarding disaster management research resources. The comparative study leads to identifying many factors that are unique to national disaster management system when reflecting on traditional approaches, such as a single-case study, being too parochial, rigid, or even narrow in their theoretical process (Jreisat, 1975; Luft & Ingham, 1955). Additionally, traditional approaches have not been based on cross-cultural situation. Therefore, this comparative study plays a role in fostering the development of effective planning and programs in the field, particularly by referring to the cross-language perspective.

As can be seen in Table 1, the two major stakeholders identified are Korean-speaking researchers and English-speaking researchers. These two groups have been directly or indirectly involved in all major resources of Korean disaster management research. Research resources written in other languages are excluded from the scope of this framework. By cross-checking the two stakeholders, four research resources, including open research resources, blind research resources, hidden research resources, and unknown research resources, are analyzed.

Descriptive content analysis has been well known for its systematic review of the subject (Kim & Lennon, 2017). Similarly, the Johari window has thoroughly pursued the systematic aspect of disaster management research resources by referring to open/free resources, blind resources, hidden resources, and unknown resources in that order (Newstrom & Rubenfeld, 1983). The Johari window comprehensively includes not only the bright sides of research resources but also their dark sides. Considering these aspects, the Johari window technique is quite relevant for the methodology used in this article.

### 4. Results: current status of electronic research resources

#### 4.1. Open research resources

Open research resources include four major English resources, such as international journals, the United Nations’ official documents, Googlescholar.com, and Yahoo.com, which are some of the many open research resources. It is worth noting that those four major English resources have been widely used by both English-speaking researchers and Korean-speaking researchers. To elaborate, all English-speaking researchers may access such resources and generally understand related contents. Also, although only a few Korean-speaking researchers can understand the contents from such resources, all Korean-speaking researchers have equal access to them.

Many publications have held a monopoly of their research results. Without the Internet, it would be more difficult for researchers to communicate or share their research results with their colleagues. Through the use of Internet, many researchers have overcome these difficulties. With the support of public funds, many researchers have been able to read, copy, print, download, and distribute research results without much restrictions.

Nevertheless, open research resources are, at times, said to be useless resources to many Korean-speaking researchers, mainly because they do not understand the English language very well. Furthermore, even though those open resources are electronically suitable to all researchers, even English-speaking researchers still face difficulties in freely accessing such resources because of strict copyright laws (Sharma, 2013).

#### 4.2. Blind research resources

A good example of blind research resource is the Emergency Management Institute (EMI)’s Independent Study Program (ISP). Various English-speaking researchers have recognized important courses in the program. At the same time, they have used it as their research resource (Emergency Management Institute (EMI), 2019). However, almost all Korean-speaking researchers were not able to use this program as their research resource.

The EMI’s program includes many disaster management principles, such as comprehensive emergency management, integrated emergency management system, incident command system, whole community approach, and many others. The International Association of Emergency Managers (IAEM) has contributed to spreading the EMI’s program to many isolated areas while encouraging local emergency managers to take appropriate courses and become certified emergency managers.

Blind research resources have been frequently ascertained as a sort of “liability” in the field of disaster management research (Katsikopoulos & Gigerenzer, 2013). A liability is something that causes negative problems and, thus, should be efficiently solved. The EMI’s program has been electronically usable to Korean-speaking researchers; however, they have not recognized its existence. Some have surely recognized it, but they have not fully understood it due to language barrier. Thus, at present, the EMI’s program is considered a challenge for Korean-speaking researchers.

#### 4.3. Hidden research resources

Hidden research resources include local definitions on disaster management, local community data, and knowledge of indigenous resources in Korea. Although all Korean-speaking researchers have comparatively understood them, many English-speaking researchers are not aware of them. A good example is that “banjae” to Korean-speaking researchers means “to manage typhoon accompanied by flood,” but it has frequently been translated as “disaster prevention” in English.

Language does matter in the field of disaster management research (Kim, Ferrini-Mundy, & Sfard, 2012). When English-speaking researchers work on their mathematical research, they predominantly explain the issue in procedural terms. On the other hand, Korean-speaking researchers respond to the issue via structural ways. When English-speaking researchers work on the issue either in the English language or in the Korean language, they are less prolific than when bilingual researchers resolve the same issue.

Electronically, hidden research resources have been certainly available to both Korean language researchers and English-speaking researchers. However, many English-speaking researchers have not been able to use those resources for their research because of the language barrier or the lack of appropriate understanding of the local culture. In terms of understanding relevant resources written in English,
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Korean-speaking researchers are at a disadvantage. On the contrary, English-speaking researchers are at an advantage because they do not face any challenge in understanding the language.

4.4. Unknown research resources

Unknown resources, as the name suggests, are unfamiliar to many. They remain to be determined or discovered for meaningful use. One example would be the precise differences between Korean language research and English language research regarding disaster management. Further examples are the applications coded in programming languages and experiments with results that are not yet available to the public and are known only to some scientists.

A few researchers have pointed out the existence of unknown research resources in the field of disaster management (Ramasesh & Browning, 2014), such that they have willingly or unwillingly faced unknown research resources while attempting to develop new disaster management products or implement new disaster management processes. Despite these unknown research resources, they have paradoxically made their new theories.

A superficial form of integration is based on the fact that albeit far too many resources are available in the Internet, they remain unknown to many. Exactly evaluating the gap between and among researchers and precisely assessing the gap between and among resources are quite a challenge.

5. Discussion: toward integrated research resources

With the above-mentioned analysis of the four research resources, it is summarized that the current Korean model should be named as electronic research resources. Although research resources have been located and then directly or indirectly managed under their own circumstance, they have all been just electronically suitable for not only Korean-speaking researchers but also English-speaking researchers via the Internet.

As long as only electronic research resources are used in Korea, the field of research will surely lose important knowledge and information on disaster management. In other words, disaster management researchers may not efficiently use knowledge and information from electronic research resources due to the associated challenges. Without the appropriate research results as their source, most researchers will not be able to produce better alternatives. Therefore, electronic research resources must be changed into integrated research resources. Integrated research resources mean that all research resources are not only electronically usable but also substantially used by various researchers without much difficulty.

Both Korean-speaking researchers and English-speaking researchers have to re-evaluate the way they use integrated research resources. It has been known that any change in one research resource may influence the other research resources in many cases (Luff, 1982). Thus, all researchers should initiate their drive within appropriate resources to start realizing appropriate changes. Based on the initial change, those researchers need to work together to reach the apex of the targeted model.

While thinking that disasters cause not only physical impact but also social impact to the human society, this article has examined critical problems and appropriate alternatives on disaster management in the viewpoint of impact assessment. To illustrate, this article has made efforts to provide theories on research resources, while also trying to mitigate or assess the physical impact and social impact of disasters. In summary, both electronic research resources and integrated research resources have been engaged under the context of impact assessment.

Fundamentally, both Korean-speaking researchers and English-speaking researchers should be aware of the negative aspects of electronic research resources or the necessity of integrated research resources. Up to present, some researchers are not aware how the four resources are being used. In other words, they are not interested in examining the issue and, thus, work for their own research under a limited scope. Specifically, without related awareness, they would not be willing to work for change.

Based on the high level of related awareness, all researchers need to plan the integration of disaster management research resources in advance (Chang, Wilkinson, Brunsdon, Seville, & Potangaroa, 2011; Jugend, Araujo, Pimenta, Gobbo, & Hilletofth, 2018). By systematically planning how to overcome the status of superficially integrated resources or how to implement related countermeasures, they may flexibly tackle diverse research issues, as shown in Table 2.

While changing to integrated research resources, it is inevitable for the research field to coordinate thorny research issues. Without voluntarily coordinating the stark differences among various researchers, the research field will be in a rut and unable to advance. Also, it is quite necessary not only for English-speaking researchers but also for Korean language researchers to give up their vested interests or privileges, if any, for the ultimate goal of disaster management.

Considering that disaster management is a public service, the Korean governments, such as the Ministry of the Interior and Safety (MOIS), should play an appropriate role in supporting the integration of research resources (Hakaloba, Mumba, Dambe, & Michelo, 2016). By officially addressing the changing process via legalization, budget allocation, tax reliefs, international relations, and others, the MOIS may contribute to the sustainability of resource integration.

Furthermore, the MOIS may develop its research management section as a formal international organization and then facilitate it to work for integrated research resources with the full participation of both Korean-speaking researchers and English-speaking researchers. In doing so, the MOIS may create a series of working committees between and among countries.

As they approach integrated research resources, all Korean-speaking researchers and English-speaking researchers should be allowed to ask questions at anytime (Armstrong, 2006). Many English-speaking researchers have more frequently asked questions on their researches under the Western culture than what Korean-speaking researchers have performed under the Confucian culture. With barriers in freely asking questions, the research field would not be able to sufficiently advance.

Table 2

Alternatives toward integrated research resources.

Sources: (Lee & Kim, 2011; Westerwick, Kleinman, & Knobloch-Westerwick, 2013; Yoon, 1996).

| Four resources/alternatives | Appropriate alternatives |
|----------------------------|--------------------------|
| Open research resources    | - All kinds of open research resources should be freely accessible to Korean-speaking researchers as well as English-speaking researchers without any restriction, for the goal of distributing research results. |
| Blind research resources   | - With the support of IAEM, Korean-speaking researchers must understand the status of EMI’s ISP as a fundamental research resource. Also, the EMI (or English-speaking researchers) may add the characteristics on Korean disaster management or its research resources into ISP. |
| Hidden research resources  | - To reduce the extent of language barrier between Korean-speaking researchers and English-speaking researchers, the field of research must operate on diverse networks in multi-languages. |
| Unknown research resources | - Bilingual (English language and Korean language) researchers need to work on comparative perspectives between Korean language research and English language research or joint international research. |

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Accordingly, all answers need to be composed of appropriate knowledge and information. If those answers do not provide related information or data to those who ask questions or they just keep silent due to political reasons, those questions will just be meaningless. Therefore, when there is a question from any researcher, there should be an answer for the goal of integrated research resources. Without an answer, the embodiment of integrated research resources would not succeed.

Although a huge amount of information has been advanced with high speed, almost no one has ever been completely competent in understanding or interpreting them. Diverse kinds of information have been produced in incremental pieces. Hence, the free flow of information exchange has to be facilitated in the research field before jumping into integrated research resources. Basing on the concept of open communication in the research field, various researchers must freely exchange appropriate research knowledge and information with others (Little, 2005). For the ultimate goal of disaster management, all researchers need to utilize interpersonal communication as well as two-way communication.

The use of Johari window has been an excellent technique, which makes individuals and groups better grasp their relationship with not only themselves but also others. On the effect of the Johari window, it has provided a fair opportunity to see how the field of disaster management research resources has been operated. By assessing how the self and others are doing, the Johari window has played a role in positively supporting the field of disaster management research. Also, the Johari perspective may be considered as a cornerstone in evaluating the level of Korean disaster management research, particularly by equally investigating all important areas/aspects.

Similarly, as the realization of disaster management research is much related to either the success or failure of disaster management, the Johari window is regarded as a supervision tool, as well as a self-assessment tool for disaster management research resources (Halpern, 2009). While comprehensively overseeing the big picture of scientific research, the field of disaster management can efficiently use the Johari window in supervising research processes.

It is known that the Johari perspective has provided new research opportunities for many past researchers (Giarratano, Savage, Barcelona-Demendoza, & Harville, 2014). On this point, appropriate researchers may meet with new research agenda on disaster management research, with the support of this article. In other words, when considering that the Johari window has shown both the resilience and vulnerability of disaster management research in Korea, related researchers may figure out much more research agenda.

Ultimately, the general direction of Korean disaster management research will be able to free itself from fragmentation. If research resources will remain as only electronically or superfi cially available, related researches will just be fragmented. However, when the integrated research resources are addressed, related researches will be carried out in a more holistic way (Waring, 2015). As a result, researches in the future will have a more comprehensive quality.

6. Conclusion

On top of doing impactful assessment, the purpose of this article is to assess how efficiently the Korean field of disaster management research resources should be improved to contribute to the ultimate goal of disaster management. Considering that both electronic research resources and integrated research resources have been systematically drawn via the Johari perspective, this article has been successful in achieving its original goal.

The biggest finding is that not only Korean-speaking researchers but also English-speaking researchers must exert e fforts to change electronic research resources into integrated research resources. For its implementation, all four research resources, namely, open, blind, hidden, and unknown researches, have to carry out their own assignment, such as distributing open research data, approaching the EMJ’s ISP as a basic research resource, enhancing diverse networks in multi-languages, and encouraging comparative perspectives and joint international researches.

While reflecting on the fact that no rigorous study has ever been attempted yet to analyze the Korean field of disaster management research resources via the Johari perspective, this article has many advantages as a pioneer study. At the same time, this study has illustrated that both Korean- and English-speaking researchers can benefit from using the Johari perspective. Moreover, it has shown the problems and the alternatives surrounding research resources in the field of disaster management in Korea.

This article has directly indicated the need for diverse studies in the future. For example, it will be necessary for Korean-speaking researchers and English-speaking researchers to further delve into their assigned responsibilities regarding open, blind, hidden, and unknown research resources. In addition, researchers are encouraged to apply the Johari perspective to their own case studies. Then, they may eventually compare or contrast their results with a Korean case or among themselves.

Declaration of Competing Interest

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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K.-M. Ha can be contacted at: ha1999@hotmail.com (ha1999@pusan.ac.kr).

Kyo-Man Ha

Kyo-Man Ha received the PhD Degree from the Department of Political Science, University of Nebraska-Lincoln. He is working for the We company as a researcher as well as Pusan National University (in Korea) as an adjunct professor. Also, he, as a Certified Emergency Manager, is serving as the Korean representative for the International Association of Emergency Managers. His research interests include emergency management and public policy. He has published numerous articles on those topics. Kyo-Man Ha can be contacted at: ha1999@hotmail.com (ha1999@pusan.ac.kr).