STRUCTURING NATIONAL EMERGENCY MANAGEMENT TOWARDS SUSTAINABILITY DEVELOPMENT FOR UAE: A CONCEPTUAL APPROACH

Ali Ahmed AL-Hammadi, Institut Pengurusan Teknologi & Keusahawan, Universiti Teknikal Malaysia Melaka
Wan Hasrulnizzam Wan Mahmood, Fakulti Teknologi Kejuruteraan Mekanikal & Pembuatan, Universiti Teknikal Malaysia Melaka

ABSTRACT

Natural disasters usually have an impact on both the economy, considering its available resources, as well as the society. Therefore, the national crisis and emergency authorities (NCEMA) may engage through a structured sustainability development that align with the distribution of resources and budgeting to enhance the process of preparedness during national emergencies. Though the UAE has been faced with major disasters in the past years, the process of disaster management has been complicated as the NCEMA has had difficulties in ensuring the process for disaster management, preparation, and recovery. Consequently, a lack of quality resource allocation due to management practices and framework causes an increase in wastage, as well as the lack of preparation and recovery. It also affects the community growth with the process of returning way of life to normalcy, taking more time at a higher cost. Thus, the objective of this paper intending to propose a new framework to integrate the resources management and disaster management approach for national emergency. This will encourage the NCEMA to profit by global ability and empower the coordination of logical, specialized, and human endeavors to react to crises and catastrophes. Besides that, the framework allows the UAE to ensure the quality allocation of resources, which in turn prepares it and its citizens in case any disaster takes place and enhances different policies to sustain the level of emergency preparedness. Although this study focuses on national emergency, the findings may well have a bearing on the others kind of management fields as well.

Keywords: National crisis and emergency authorities (NCEMA); Emergency management; Conceptual framework; Sustainability development; UAE.

INTRODUCTION

In many countries, the Government has mandated the institution to perform mainly three roles: risk awareness, communication, and resource support for emergency management. Risk awareness entails ensuring the education of people in different types of disasters that can occur. The process of risk awareness allows the organization to educate people to be well prepared before the occurrence of disasters. The second role entails the process of alerting the public before, during, and after the event of disasters on such aspects as management, safety, and resource allocation. Communication is one of the vital factors in enhancing the process of disaster management. It is imperative to note that most countries have faced disasters due to a lack of quality preparation, which inhibits the quality of

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preparedness among the individuals in society. The last primary role includes the quality allocation and management of the resources before, during, and after disasters.

Since the United Arab Emirates (UAE) has faced different disasters, it is of great significance to introduce and implement different guidelines and standards to allow effective resource allocation. Thus, the UAE, under the NCEMA, has established the UAE Disaster Management Approach (DMA) to enable the whole country to be well prepared for different disasters to occur in advance. The quality of preparation for the country is more concentrated on the increase of awareness and resource distribution. The framework allows the UAE to ensure the quality allocation of resources, which in turn prepares it and its citizens in case any disaster takes place. Despite an increase in budgeting and cost, the UAE has been facing different disaster management situations. The process of allocating resources has been quite an issue with the government enhancing other policies to sustain emergency preparedness. Such approaches, however, have failed to address the structural analysis the national emergency management towards sustainability development for UAE.

The growing awareness to consider society, the natural environment, and the economy's state make sustainability an important issue amongst organizations worldwide, including emergency management. This concept has been applied in many fields, including engineering, manufacturing, and design. It can be defined as the ability of an entity to sustain itself into the future without impacting the capacity of other entities in the system to sustain themselves (Reich-Weiser et al., 2008). In simple words, sustainability can be said as a simple matter of sharing the capacity for well-being between present people and future people. In the context of emergency management, sustainability can be defined as creating and developing system by implementing a structural process and systems that minimize the negative environmental impact, minimally consume materials and other resources, and at the same time safe for all stakeholder and are economically sound beneficial (Orji & We, 2015; Winroth et al., 2016).

The current approach used by the UAE makes the process of disaster management difficult, as well as quite challenging with uncertainty risk, limited resources, and budget costs. Thus, it requires imperative framework structure to examine different techniques, historical examples, and past scholar models in order to create a framework that would allow quality use of available resources. The efficient allocation of resources would allow disaster management to be quite effective, thus enhancing the process of disaster management and recovery. Proper resource allocation needs to be proved to be an effective mechanism that allows establishing a framework that would enable the constructive use of the available resources. Each resource in an institution is equally crucial in promoting disaster management. Therefore, the objective of this paper to propose a new framework of resources management and sustainability measure for UAE national emergency management. The organisation of this paper is as follows. Section 2 explains about the research method, Section 3 reviews on the emergency management, Section 4 discusses the conceptual framework and finally a conclusion and suggestion for future research in Section 5.

RESEARCH METHODS

This study starts by exploring the information from several articles published related to emergency management from 2010 to 2021 in order to achieve the objective of this study. Initially, the review process is focused on identifying the main issues of global emergency management and its sustainability. Keywords such as “emergency management”, “sustainability development”, “conceptual framework” and “UAE” have been used for identifying and selecting the references on various databases. All articles are then filtered and

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sorted by relevance to the emergency management guided by the research questions as below:

Q1: What are the independent and dependent criteria in achieving sustainability development for emergency management?

Q2: What are the significant factors that align with emergency resource management in UAE?

Q3: What is the focus aspect to ensure the sustainability development in UAE?

Q4: What are the relationships between the findings?

Based on the above questions, the practices that mediate the implementation in each emergency management component were then grouped according to the mediation aspect of implementation such as resource management and disaster management approach. Next, each mediation aspect of implementation is then used in explaining how the performance of each emergency management component (or independent variable) can be assessed by referring to the mediation sustainability development (or independent variable) that identified. This was followed by discussing the possible relationships that exist between the mediation aspect of implementation that identified and used to propose a conceptual framework in structuring the new national emergency management towards sustainability development particularly for UAE case study. In this study, the validation stage is carried out using expert's review. It is a significant way to improve the quality of the work (Razali, 2015). Expert reviews do not replace usability testing and do not have benchmarking measures. It is better used when a usability test is not possible.

EMERGENCY MANAGEMENT

Emergency management (EM) and disaster management are viewed in various dimensions by different researchers. However, in the past, researchers used the definition of emergency management provided by international agencies, such as the United Nations and the Federal Emergency Management Agency (FEMA, 2017; 2017; 2019; 2020a;b). One of the main challenges of emergency management is that it comprises many variables, each distinctive from one geographical location to another or situation. Emergency management is the process of balancing the available risk with the given resources to reduce the overall impact caused by the hazard (Fagel, 2016). Academic institutions have outlined some of the standard variables that define emergency management, such as risk and disaster. EM has two elements, which include actors and dimensions. The actors are the stakeholders that ensure preparedness and control, including public and private institutions.

Due to the element of risk, managing and responding to different crises can be considered one of the challenging factors. One of the main concepts that make it challenging is because the risk of the disaster might occur without public awareness (Perry, 2018). Most of the disasters that occurred in the world have caught the community or the public unaware. The lack of awareness and expectation reduces the element of preparedness, thus causing human, economic, and environmental losses. However, disaster management has been proved to cause and immense social destruction. Many of the disasters in the community have caused social disruption, and the damage has exceeded the available social resources environmentally. According to different explanations and definitions, a disaster is an event that can affect the balance in society by creating dysfunctionality either socially or economically.

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Therefore, it is evident that when it comes to the management of emergencies, there is a need for an unusual amount of both effort and resources. There are different levels of professionalism around the world, as well as considerable variations in the standards according to which people recognize, discuss, and explain various concepts (Pathirage & Al-Khaili, 2016). Moreover, the views and opinions of people on specific issues are greatly affected by their culture, religion, traditions, as well as other aspects. Additionally, the level of agreement between the international and national organizations seems to have minimal to no coordination at all. Disaster management can be defined as the process where available resources are used during the disaster to reduce its impact on society (Waugh, 2015). The adoption of this definition is because it generally provides a comprehensive, clear, and practical understanding of what EM is both practically and theoretically. Furthermore, it is not based on the kinds of hazards. Moreover, it is homogeneous to the main objectives of this study. Since the definition of EM has been selected, the following section gives an overview of emergency management. It starts with global effort and the outset of strategies employed by the leading international organizations and agencies. The followings sub-chapter explores the standards of EM applied in developed countries, including the USA, the UK, Australia, as well as the UAE.

National Emergency Management

The studies in the US, UK, and Australian emergency management established gaps, similarities, and differences. However, the different geographical, cultural, and political factors affected the emergency management of these nations, which also applied to the UAE systems. Over the years, emergency management policies have changed due to evolving hazards that address future, and current lessons and challenges learned through their success and failures. Which is the main subject of the study for UAE area of improvement in emergency management. The study will also consider the standards and especially the phases that determine emergency and disaster responses.

For instance, during the 2019 national budget distribution, the FEMA allocated more than 28.7 billion dollars to reduce easy management of disasters (FEMA, 2019). The process of budgeting and preparation of resources plays a vital role in ensuring the processes of prevention, preparedness, and recovery. Therefore, all the responsible institutions are supposed to ensure allocating resources is done effectively, thus facilitating quick recovery both economically and socially (or sustainability measures). Despite the high budget and resources available both in the state and federal government, allocating resources is complicated, as most people usually face different challenges during disasters. The data collected by the FEMA shows that the number of disasters from 1980 to 2018 has increased, and resources and budget allocation has become a limiting factor. As outlined, most of the losses arising from meteorological events, including tropical and local storms. This is followed by metrological events such as hydrological and climatological events with a few disasters related to geophysics events. The four classifications of events make up the highest occurred disasters, leading to immense losses and fatalities. However, there are many challenges associated with resolving, preventing, and managing national resource-induced emergencies and crises.

Emergency Management Standards in the UAE

Like in the developed nations, as discussed earlier, the UAE faces similar crises, disasters, and emergencies, such as sandstorms, floods, earthquakes, airplane crashes,

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tsunamis, tropical storms, cyclones, traffic accidents, fires, and many more. These are inscribed by the property claims affected by these disasters. According to the available literature on the United Arab Emirates, it is evident that it is vulnerable to different disasters and that there is little or no evidence of emergency management systems (Pathirage & Al-Khaili, 2016). This chapter focuses on the literature available to examine UAE emergency management mechanisms. Even though the NCEMA restricted the data and review documentation, the data was explored in combination with the United Kingdom, as the UAE tailored the CCA to create its own emergency management program. The lack of literature on the UAE emergency system is because the nation is still in its early phase of creating emergency programs. It should be noted that by 2007, the Ministry of Interior had been tasked with dealing with all types of emergencies in the United Arab Emirates, since in the 1900s, it lacked any form of emergency plan or program. However, after the tropical storm Ganu in 2007, an institution was set up to deal with emergencies in the country. The UAE sent staff to the developed nations, including the United Kingdom and the United States, to be educated on emergency management systems that the UAE could implement in order to prevent and manage crises.

The evolving needs of the developing nations, such as the UAE, and the awareness of natural disasters have led to the creation of the NCEMA. The agency managed by the High National Security Council (HNSC) has several roles which include, emergency management and control of crises: provision of rapid recovery response through proper coordination and communication at both national and regional levels of government, and establishment of business continuity requirements for sustainable growth (WHO, 2016). In addition to the NCEMA program, the National Response Framework (NRF) was created. It was aimed at working out and implementing training mechanisms and auditing the structures related to emergency management at the national, local, and regional levels. The program increased the UAE preparedness for emergency eventualities through periodic training and drills to guarantee the reaction of UAE emergency response. The above programs indicate the existence of mechanisms on emergency management standards and countermeasures, but there is no comparison on the preparation levels shown in the developed nations, like the US, UK, and Australia.

The UAE set restrictions and regulations to gain control over the prevalence of COVID-19. At the beginning of the pandemic citizens of the UAE were quarantined and leaving the house without digital permit was not allowed between 6:00 AM and 10:00 PM. Since April 24th, 2020, the lockdown has partially lifted for Dubai and Abu Dhabi, wearing masks is mandatory in public There are some restrictions regarding visiting public areas such as malls or restaurants which limits 30% of their initial capacities, also no more than 30% of employees should be working on the same spot, and family gatherings are limited to five people only (WHO, 2020). Some public areas are closed like the gyms, cinemas, prayer rooms, and other venues. The number of cases confirmed are 18190, 198 reported deaths, and 4804 recovered. 40,000 people are being tested every day (JHU, 2020). The UAE reached top three countries testing the most of their population.

The Authority organizes with administrative experts keeping in mind the end goal to improve the state capacity to oversee crises, emergencies, and calamities by gaining from the created nations and building up the assessment benchmarks for the methodology of the legislative specialists and divisions, media is a part in mindfulness and early alarm programs. A crisis Based on NCEMA perspective is any major incidents that may make grave harm people or property or a risk to general society arrange, government business coherence, individual's wellbeing, condition, or economy and need an exceptional assembly and coordination with a few specialists. An emergency is a more convoluted occasion that

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debilitates the solidness of vast segments of the public and influences the administration's capacity to carry out its activity (NCEMA, 2018).

Concepts of Emergency Assessment and Management

The first concept of emergency assessment speculates that the risk description might rely upon a certain threat or scenario (Wafik et al., 2017). The scenario-based risks are assumed risks that involve elements, such as location, time, and process. However, disaster management risk is different and is based upon the assumed threats and scenarios that include time, location, process, and social activities. It is prudent to understand risk as a threat or a probable scenario to help determine the planning methods and measures that could manage the risk in the most effective way. Therefore, it is possible to note that risk assessment contains various process elements, such as risk identification, analysis, processing, and monitoring. The structured procedure, which includes management policies and practices, is known as risk management. Risk assessment and management are referred to a comprehensive phase that covers several stages, starting with identifying, analyzing, evaluating, treating, and monitoring the risks. Therefor the Civil Contingency Act established in 2004 defines the risk management process in an emergency preparedness point of view as the process that involves communication and options as to whether to accept or reject the risk variable.

CONCEPTUAL FRAMEWORK

The conceptual analysis of emergency preparedness of these nations helped look at the theoretical and practical aspects of emergency preparedness in the United Arab Emirates. Under this section, emergency management requirements were assessed and evaluated that help distinguish that the UAE has no emergency preparedness structure or model related to resources management. However, it is imperative that the UAE should establish that if the emergency preparedness components in the country are controlled by all agencies with available resources to avoid the impact of a disaster. Emergency preparedness frameworks or models and the critical components of preparing for emergencies can assist in identifying the gaps in the multiple frameworks in existence to have a better emergency preparedness stage. This paper outlined the two elements and provided an in-depth understanding by detailing each section and outlining the basis for an investigation to the existing state of emergency preparedness in the UAE which named as independent and dependent variables. The given framework helps in the efficiency of each of the disaster management agencies or organization towards effectiveness as suggested by Creswell (2013).

The framework will be proposed in decision making and resource allocation in the strategic level depends on the quality of disaster management and the outcome. Furthermore, it is worth stating that an increase in the number of the population has strained disaster management agencies in the past years. Despite the above-mentioned increase, resources still become a limiting factor causing a significant decline in preparedness and recovery. The lack of enough resources has made it even challenging for agencies to reduce the impact of a disaster. The process of building a new framework would allow minimization of wastage through the optimization of the available resources, hence reducing the social and economic impacts of a crisis or a disaster. It would also allow the quality preparation of the NCEMA for different disasters, thus enhancing the agency to achieve its objectives in the future. The optimization of resource allocation allows minimizing risk, as well as mitigating cost. Thus,

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examining resource allocation optimization would allow the process of recovery duration and cost to be controlled, hence enhancing proper crisis management.

Figure 1 shows the conceptual framework. Primarily, the framework construct to examine the process of Resource Management or RM (that consist of finance resources; inventories; human resources; production resources; information & technology, and risk management) and thus determining whether the organization resource allocation technique is decentralized or centralized as independent variable. The framework is associated to establish the average impact of disasters the agency was able to manage in the past years: Economic: monetary losses; and Social: the number of fatalities. Both impacts are recognized as sustainability measure by many researchers. Besides, sustainability is recently gaining popular research motivation variables among researchers towards balancing global human needs and ecosystem. The second independent variable is added as suggested by expert panel in the framework development. UEA current disaster management approach or DMA were considered as additional variable that consist of four main elements which included Prevention, Preparedness, Response, and Recovery.

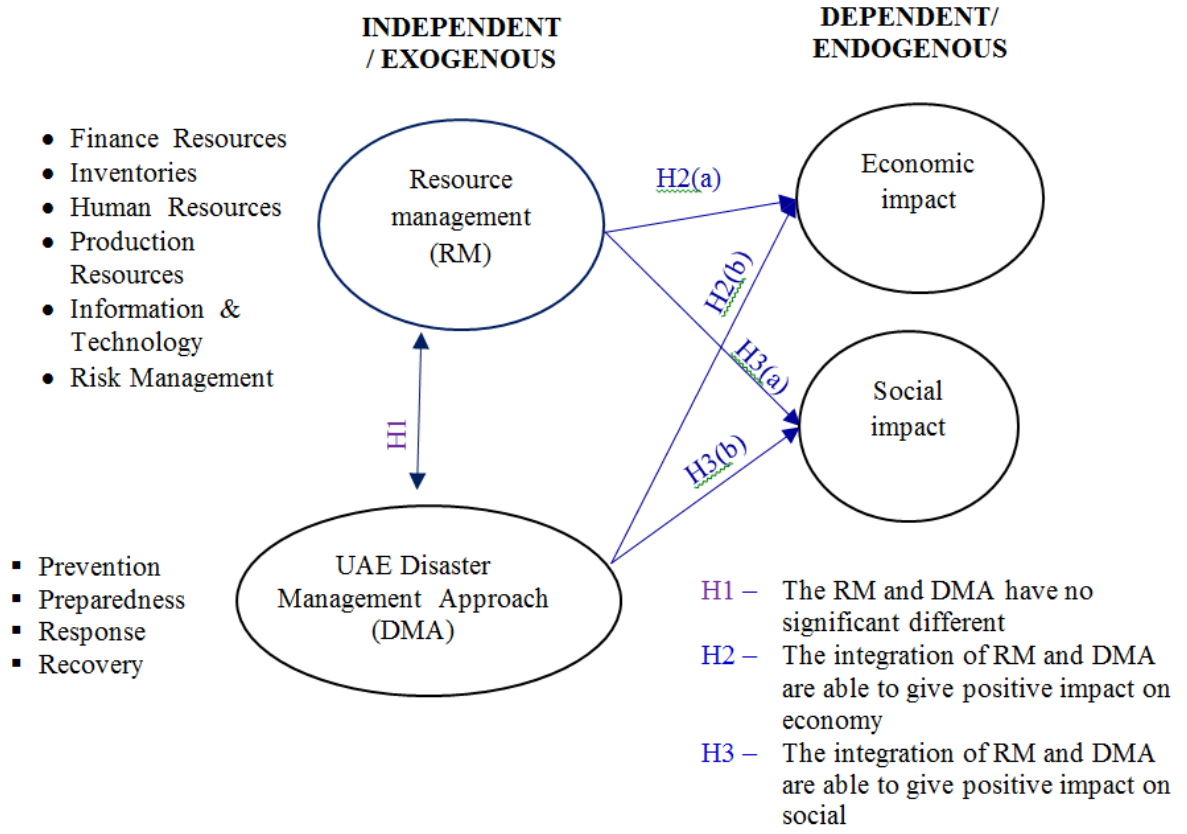

FIGURE 1

CONCEPTUAL FRAMEWORK

The fundamental objective of this research is to determine the integration framework of resource management for emergencies management. Equally, it is of great importance to establish the mediating effect of intensity between the variables of the study. Based on these grounds, the relationship between the variables of the research is predicted to be positive. This framework construct on independent/exogenous (resource management RM and UAE

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disaster management approach DMA) linkage to both RM & DMA elements as preventions - preparedness - response - recovery for DMA and finance resource - inventories - human resources - production resource - information & technology - risk management), the second part of framework dependent/Endogenous construct on hypothesis include two variables the economic impact and social impact with three hypothesis (H1 - The RM and DMA have no significant different, H2 - The integration of RM and DMA are able to give positive impact on economy, H3 - The integration of RM and DMA are able to give positive impact on social). The conceptual framework developed for this study was generated through theories and literature review, introducing the variables and elements that have not been exploited in other studies conducted by other researchers.

For validation purpose, the several of experts who have at least ten years of professional experiences in disaster management were selected. A piece of instrument that consists of a few questions used in the experts review validation. The instrument contains the rank of both independent variables (RM and DMA practices), and dependent variables (economic and social impact). The experts were advised to indicate the extent to which they agree with the proposed framework. Additionally, a blank space is provided in the questionnaire for the experts to annotate helpful comments that would improve the proposed framework.

CONCLUSION AND FUTURE WORK

This article discloses that emergencies management does not only depending on global practices such as literature review but require to acknowledge current practices in particular country. This because, there may have some gap that need to be revealed. The findings also found that a conceptual framework must have both independent and dependent variables. All the variables should have specific measure that can be referred by any NCEMA as a principle for continuous improvement.

For future research, quantitative analysis through empirical study will be used to measure the degree of influence of the RM and DMA performance against each sustainability impact on economy and social. This may lead to in depth analysis in order to understand the influence of RM performance against DMA. The findings can be used to develop a framework in establishing a diagnostic model that can be used by academicians and NCEMA practitioners in developing a strategic plan, in hopes of creating a comprehensive framework that increase the performance of the emergency's management in the future.

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