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**AN INTEGRATION FRAMEWORK OF RESOURCES MANAGEMENT AND
DISASTER ORGANIZATIONAL APPROACH FOR UAE NATIONAL
EMERGENCY**

ALI AHMED ALHAMMADI

**A thesis submitted
in fulfillment of the requirements for the degree of Doctor of Philosophy**



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2023

DECLARATION

I declare that this thesis entitled “An Integration Framework of Resources Management and Disaster Organizational Approach for UAE National Emergency” is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in the candidature of any other degree.

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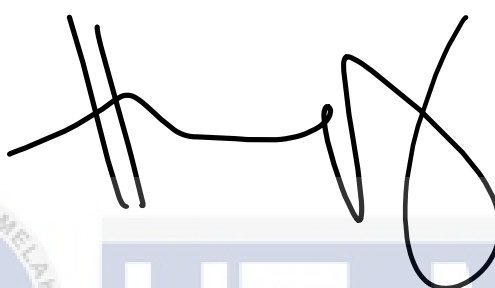
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APPROVAL

I hereby declare that I have read this thesis and in my opinion this thesis is sufficient in terms of scope and quality for the award of the degree of Doctor of Philosophy.



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DEDICATION

To my beloved father and mother.



ABSTRACT

Natural disasters usually have an impact on both the economy, considering its available resources, as well as the society. Therefore, the Federal Emergency Management Agency (FEMA) has been ensuring an equal 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 a lack of preparation and recovery. It also affects the community growth with the process of returning the way of life to normalcy, taking more time at a higher cost. Therefore, the objective of this study is to propose a new framework that integrates the resource and disaster management approach for national emergencies. This study's target population consisted of staff who use their expertise and experience in UAE crisis management organizations. Out of 152 respondents, only 139 are useable/valid for analysis by Structural Equation Modelling (PLS-SEM). The results show that all five hypotheses are supported. The contribution of this study increases investment and policymaking. The rate of preparedness during a disaster has been low, affecting the economic growth of the UAE with the resources available not enough for disaster management. This will encourage the NCEMA to profit by global ability and empower the coordination of logical, specialized, and human endeavour 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. Furthermore, building a framework that would allow enhancing the process of resource optimization would enable the federal institutions in the UAE to ensure that their disaster management techniques would be effective in reducing the impact of a national disaster or crisis. Future studies could employ a mixed-method (quantitative and qualitative) approach to overcome any issue of information bias.

KERANGKA INTEGRASI PENGURUSAN SUMBER DAN PENDEKATAN ORGANISASI BENCANA UNTUK KECEMASAN NEGARA UAE

ABSTRAK

Bencana alam biasanya memberi kesan kepada ekonomi, melibatkan sumber sedia ada, dan masyarakat. Oleh itu, Agensi Pengurusan Kecemasan Persekutuan (FEMA) memastikan pengagihan sumber dan anggaran yang sama untuk meningkatkan proses kesiapsiagaan semasa kecemasan negara. Walaupun UAE berhadapan dengan bencana besar dalam beberapa tahun terakhir, proses pengurusan bencana menjadi rumit kerana NCEMA mengalami kesulitan dalam memastikan proses pengurusan, persiapan, dan pemulihan bencana. Akibatnya, kekurangan peruntukan sumber yang berkualiti disebabkan oleh amalan dan kerangka kerja pengurusan menyebabkan peningkatan pembaziran, serta kurangnya persiapan dan pemulihan. Ini juga mempengaruhi pertumbuhan masyarakat dengan proses mengembalikan cara hidup menjadi normal, memerlukan lebih banyak masa dengan kos yang lebih tinggi. Oleh itu, objektif kajian ini ialah membangunkan kerangka baharu untuk mengintegrasikan pendekatan pengurusan sumber dan pengurusan bencana untuk kecemasan nasional. Populasi kajian ini terdiri daripada staf terlibat dalam organisasi pengurusan krisis UAE. Daripada 152 responden hanya 139 yang dapat digunakan / sah untuk analisis oleh Structural Equation Modeling (PLS-SEM). Hasil kajian menunjukkan bahawa kelima-lima hipotesis disokong. Sumbangan kajian ini meningkatkan pelaburan dan pembuatan dasar. Tahap kesediaan semasa bencana rendah, mempengaruhi pertumbuhan ekonomi UAE dengan sumber yang ada tidak mencukupi untuk pengurusan bencana. Ini akan menggalakkan NCEMA untuk mendapat keuntungan melalui keupayaan global dan memperkasakan penyelarasan usaha logik, khusus dan manusia untuk bertindak balas terhadap krisis dan malapetaka. Selain itu, rangka kerja itu membolehkan UAE memastikan peruntukan sumber yang berkualiti, yang seterusnya menyediakannya dan warganya sekiranya berlaku sebarang bencana dan menambahbaik dasar yang berbeza untuk mengekalkan tahap kesediaan kecemasan. Kajian masa depan boleh menggunakan pendekatan kaedah campuran (kuantitatif dan kualitatif) untuk mengatasi sebarang isu bias maklumat.

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In the Name of Allah, the Most Gracious, the Most Merciful.

I dedicate this work to my beloved mother, my father's soul, and to my whole family for this writing. Thank you for your full support of my efforts, and to Assoc. Prof. Ts. Dr. Wan Hasrulnizam Bin Wan Mahmood, my devoted supervisor, for your important and valuable guidance and advice. Finally, yet importantly, for their continued support, I dedicated this thesis to the government of the United Arab Emirates and the people of the emirates.

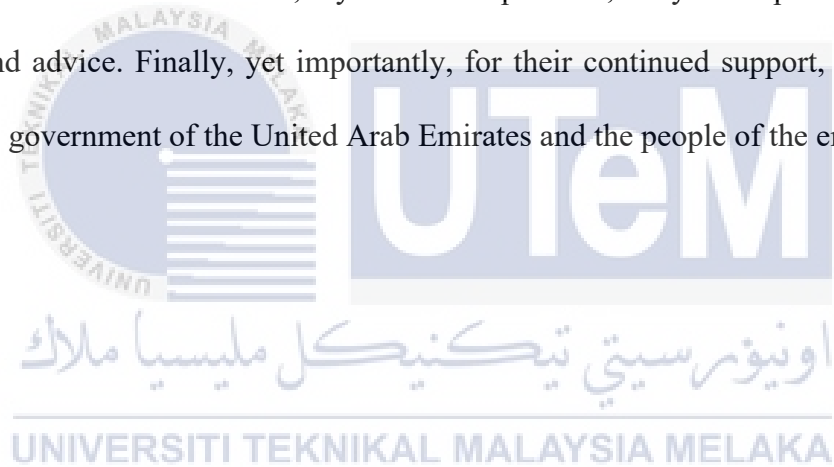


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LIST OF ABBREVIATIONS

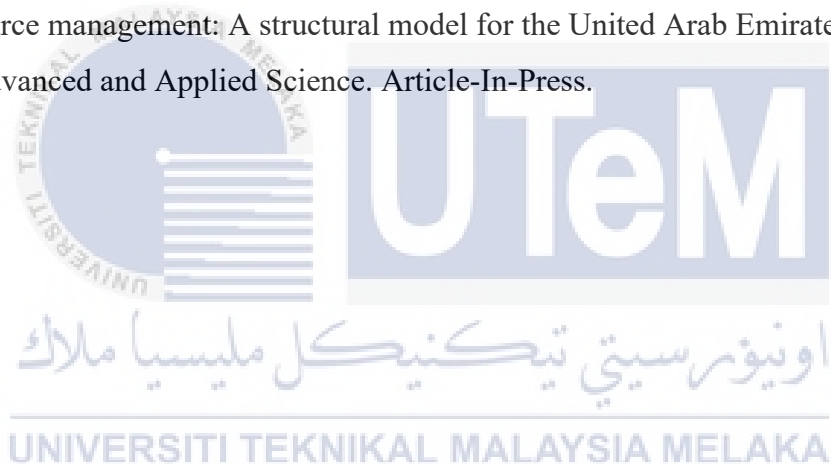
BCM	:	Business Continuity Management
CCA	:	Civil Contingency Act
CCS	:	Civil Contingencies Secretariat
EM	:	Emergency Management
EMA	:	Emergency Management Australia
EU	:	European Union
FEMA	:	Federal Emergency Management Agency
GSB	:	Gold-Silver-Bronze
HFA	:	Hyogo Framework For Action
ICS	:	Incident Command System
IDRS	:	International Disaster Reduction Strategy
NCEMA	:	National Emergency Crisis And Disasters Management Authority
NGOs	:	Non-Governmental Organizations
NIMS	:	And The National Incident Management System
NPC	:	National Preparedness Cycle
NRP	:	The National Response Plan
NRS	:	National Reserve System
PLS-SEM	:	Partial Least Squares-Structural Equation Modelling
PPRR	:	Prevention, Preparedness, Response And Recovery Model
RM	:	Resource Management
UAE	:	United Arab Emirates
UK	:	United Kingdom
UN	:	United Nations
UNDRR	:	UN Office For Disaster Risk Reduction
US/USA	:	United State Of America
WCDR	:	World Conference On Disaster Reduction

LIST OF PUBLICATIONS

Al-Hammadi, A. A. and Wan Mahmood, W. H., 2022. Structuring national emergency management towards sustainability development for UAE: A conceptual approach, *Journal of Management Information and Decision Sciences*, 25(S1), pp.1-9.

Al-Hammadi, A. A. and Wan Mahmood, W. H., 2022. Structural framework of emergency management towards sustainability: UAE case study, *Journal of Management Information and Decision Sciences*, 25(3), pp.1-14.

Al-Hammadi, A. A. and Wan Mahmood, W. H., 2023. Integrating sustainability impact into disaster resource management: A structural model for the United Arab Emirates. *International Journal of Advanced and Applied Science*. Article-In-Press.



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CHAPTER 1

INTRODUCTION

1.1 Background of the Research

Natural disasters have a devastating impact on both the economy with its available resources as well as the society at large. In the US, for instance, the Federal Emergency Management Agency (FEMA) ensures an equal distribution of resources and budgeting to enhance the process of preparedness during national emergencies. The national government has mandated that the institution perform mainly three roles: risk awareness, communication, and resource support. Risk awareness entails ensuring the education of people regarding different types of disasters so that they are well prepared before such occurrences. The second role involves alerting the public before, during, and after the event of disasters on such aspects as management, safety, and resource allocation (FEMA, 2010). It must be noted that most countries have faced disasters due to a lack of quality preparation, which inhibits the quality of preparedness among individuals. The last role includes quality allocation and management of resources before, during, and after disasters. For instance, during the 2019 national budget distribution, the FEMA allocated more than 28.7 billion dollars to enhance easy management of disasters (FEMA, 2019). The process of budgeting and preparation of resources is crucial in ensuring prevention, preparedness, and recovery. Therefore, all the responsible institutions are supposed to ensure that allocating resources is done effectively, thus facilitating quick recovery both economically and socially.

Despite the high budget and resources available both in the state and federal government, the process of allocating resources is complicated, as the majority of people usually face different challenges during disasters.

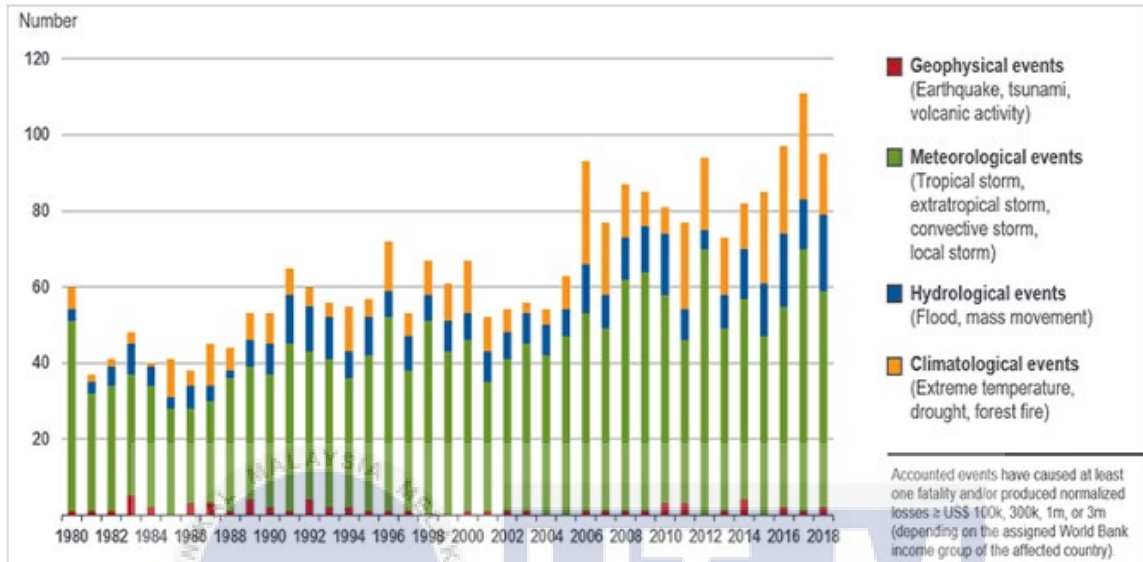


Figure 1.1: National disasters in the US (Source: FEMA, 2019)

As illustrated in Figure 1.1, the data collected by the FEMA shows that as the number of disasters from 1980 to 2018 increased, resources and budget allocation became a limiting factor. As outlined, the majority of the losses arose from meteorological events, including tropical and local storms. This is followed by hydrological events and climatological events, with a few disasters related to geophysical events. These four classifications of events make up the highest occurring disasters, leading to immense losses and fatalities. There are many challenges associated with managing, resolving, and preventing national resource-induced emergencies and crises. It is worth noting that global changes, such as environmental degradation, increasing resource consumption, climate change, and demographic changes, have been causing potentially and critically unsustainable effects on the usability and availability of national resources, including water, ecosystems, and land. When aligned with economic, political, and cultural

dynamics, national resource problems face the risk of expanding into destructive crises with severe consequences for humankind and eventually the entire planet. However, the response to such crises often adopts unacceptable and inappropriate ways.

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.

Due to the coronavirus pandemic, major events in the UAE had to be postponed, such as Expo 2020 and activities in my sector as well. It also affected the food and beverage industries. Local products were increasingly consumed, especially fresh products like vegetables. Many food and beverage establishments started online retailing; they changed their business model to align with the situation, offering delivery and takeaway options.

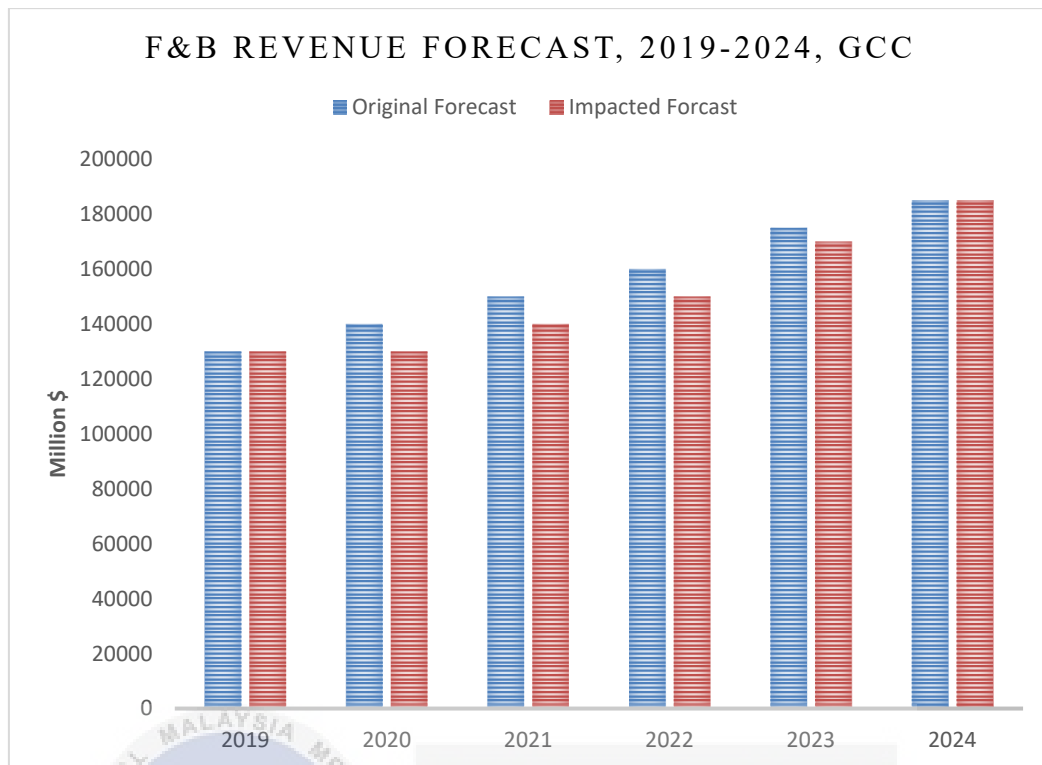


Figure 1.2: Revenue impact on the food and beverage industry (Source: Altios, 2020)

Healthcare industries also faced major challenges during the global pandemic. There were shortages in drugs and equipment due to the ban on imports from countries like India and China. Further, the region faced a huge sudden demand for medical devices. There was restriction to healthcare access for migrants, and there were delays on new product launches and elective surgeries. Three out of four surgeries were delayed resulting from the decline of surgical consumables and implants.

1.2 Problem Statement

The framework to be discussed in this study posits that one of the characteristics of disasters is the aspect of risk. Thus, the probability of occurrence of disasters in the future is high, making the quality of preparedness a crucial factor. In disaster management, the process of resource allocation plays a significant role in ensuring a reduction in economic loss (Al-Dogom et al., 2018). The aim is to clarify the emergency concepts that help in forming a common understanding of the procedures and the mechanism of action that contribute to reducing the impact of crisis at different levels and as required by the state and its institutions and individuals. Therefore, this framework illuminates the means to reach the desired goal by following specific procedures for all possible situations and events, which were developed through experience and by following best practices and global standards within the scope of human perception.

The importance of the framework is to provide immediate and accurate information on everything that is considered a resource that can be used during emergencies, crises, and disasters for the concerned authorities to support appropriate and immediate decisions that will reduce resulting damages. The framework clarifies the types of national resources and the manner of their use in all stages of an emergency such as prevention, preparedness, response, and recovery (Alzaghal and Momani, 2017).

The Sharm flood in 2009 was a disaster that affected the country, both socially and economically. In March 2009, the heavy rainfalls caused flooding, which led to the destruction of property and farms due to the lack of quality allocation of resources (FEMA, 2010). The flood resulted in the closure of major roads, hence making the distribution of resources quite challenging. Moreover, the rate of communication was drastically reduced, affecting disaster management (Alhmoudi and Aziz, 2016). Thus, the process of disaster management depends heavily on resource allocation and optimization. Though the UAE

has not faced major disasters in the past years, disaster management has become complicated, as the NCEMA has had difficulties in ensuring an optimized management of the process in terms of preparation and recovery. Consequently, a lack of quality resource allocation due to management practices and framework increased wastage and incompetent methods of preparation and recovery. It also affected the community growth in terms of getting the way of life back to a state of normalcy, taking more time and higher cost. Thus, effective resource allocation is one of the main issues affecting disaster management institutions. Moreover, a lack of disaster management affects the quality of recovery, which in turn has a negative economic impact and increasing number of fatalities.

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.

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 in quarantine, and leaving the house without digital permit was not allowed between 6:00 AM and 10:00 PM. Since April 24th, the lockdown has been partially lifted for Dubai and Abu Dhabi, but wearing masks is mandatory in public. There are some restrictions regarding visiting public areas, such as malls or restaurants which have limited their internal capacity to 30

percent, and no more than 30 percent of employees are allowed to be working on the same spot. Moreover, family gatherings are limited to five people only. Some public areas are closed, such as gyms, cinemas, and prayer rooms. The number of confirmed cases was 18190, with 198 reported deaths and 4804 recovered. Further, 40,000 people were being tested every day. The UAE was among the top three countries to be getting the most of their population tested.

National resources in the UAE continue to remain underutilized. The response to crises and emergencies by federal agencies remains ineffective as shown in previous research done by the NCEMA. The problem to be addressed is how to determine a structural, reliable and robust integrated resource management (RM) to design a database for decision making ensuring a swift response (Wisittigars and Siengthai, 2019). The crisis management of disasters does not follow automatically from disaster planning. Research has proven that crisis management that has succeeded has done so by structuring federal organizations' functioning. Therefore, the objective of this study to propose a new framework that integrate the resource and disaster management approach for national emergencies.

1.2.1 Research Gap

The UAE possesses material resources and human expertise at a high level of efficiency, so preserving these resources and using them in the correct and optimal way will help to benefit from them during emergencies, crises, and disasters, thus leading to the success of establishing a framework to integrate national resources with disaster management.