

Final Project 2

PMG 497

Project Template

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leverage of Business continuity project on Financial Companies in Riyadh

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Final Project - 2

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Dedication

This research is dedicated to all the professionals and organizations committed to building resilient systems and practices that ensure continuity in the face of adversity. Your unwavering dedication to preparedness and proactive planning inspires us all to strive for excellence in safeguarding our communities and businesses.

In particular, I dedicate this work to those who have faced and overcome significant challenges—your experiences serve as a powerful reminder of the importance of resilience and adaptability. May this research contribute to your ongoing efforts and inspire future advancements in the field of business continuity.

Abstract

The theory of Business continuity project has been developed during the recent years and it's considered to be the key for the survival of any organization that facing a crisis management. Therefore, all companies should rethink the importance of making awareness and being ready for any unexpected crisis of the organization. Inadequate studies which have examined and recognized the relationships between Business continuity project factors and company performance. The aim of this study is to evaluate the relationship between Business continuity project and company performance of companies in Riyadh, taking in consideration company resources as a mediator variable. Quantitative methods have been applied to analyze the empirical data from the survey. The target research population in this study is represented the employees in financial companies in Riyadh. This study attempts to fill the theoretical gaps in by proposing a conceptual framework related to Business Continuity Project. The result reveals that Business continuity project factors (management support, external requirements, organization preparedness, and risk management) have significant effect on the performance of financial companies in Riyadh. The findings of this paper highlight the importance of Business continuity project in today financial and non-financial crisis.

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1. Chapter 1:

Introduction

The idea of Business continuity project has grown up during the recent years and it is considered to be the key for the survival of any organization that facing a crisis and challenges in the business (Sawalha, 2013). Many companies at the present time rethink on crises management and being ready for facing them using proper management techniques. Hence, Business continuity project observed from many edges by various analysts for the purpose of developing business performance (Maier et al., 2014). The Business continuity project technique focuses on the personnel of the organization as well as the processes that are vital to business survival (Shaw & Harrald, 2006), assuring the continuity of critical functions inside companies. Hence, with the tough competition in the market, every organization should adopt a business continuity project that companies need (Alharthi & Khalifa, 2019) however, securing the flow of resources as inputs to production is the most crucial aspect of Business continuity project (Mohamed, 2019) Indeed, any type of business disruption has the potential to be enormously harmful to a company, not just in terms of monetary losses but also in terms of intangible effects on corporate reputation and confidence (Tammineedi, 2010). As a result, establishing a working strategy to ensure that important business processes are restarted as effectively and soon as feasible in the case of an unplanned disruption is a critical business necessity (Wong, 2009).

1.1. Research Background

The early studies that concentrated on the critical role of argued that Business continuity project could turn into an expert of the aggressive choice for companies but these studies did not deliberate ultimately on how business continuity project can lead to company performance specifically (Herbane et al., 2004), In extension, Sawalha (2013) further pointed out that the act of business continuity project in increasing company performance suffers infrequently been consulted or indeed focused on in the continuing studies. Hence, recognizing the possible

advances of business continuity project on the company performance is necessary to provide accurate value to the business continuity project powers and attract consideration and afterward, realizing adequate assistance from the senior management. Taking into account the important perspective of business continuity project, this study attempts to fill the theoretical and practical gaps in public companies in the Kingdom of Saudi Arabia. The empirical evidences that will come out from the quantitative analysis will show business continuity project and company performance is correlated, the main theoretical gaps in the performing literature complied with in this research lies in the inadequate studies which have examined this relationship in financial sector in KSA. The general objective of this study is to evaluate the relationship between business continuity project and company performance of public organization in KSA.

1.2. Research Problem

There are challenges faced by the Business continuity project professionals in developing and maintaining the business continuity project's infrastructure and activities (Bakar et al., 2015) Peterson (2009) argued that one of the reasons many companies fail to implement effective business continuity project is due to lack of financial support as great prudence in expenditures is exercised by many senior managements and the board of directors.

The problem statement of this study is how business continuity project's components influence company performance in financial sector companies as stated by Peterson (2009). In addition, that many companies are not aware of business continuity project and failed to implement effective business continuity project, this is due to the lack of resources that the organization have not managed as well as required, theses resource could be manpower, finance, etc. This could be in line for that there is no straight financial advantage or profit from the investment is seen from the implementation of business continuity project in the organization. In order to successfully implement business continuity project in the organization in secure funding, business continuity project's professionals in any organization should pay attention with the business authority to predict and evaluate the prospective loss due to service idle time, this could be done by identify the likelihood of risks, define the best rescue objectives and indicate

the most cost-effective clarification and knowledge about business continuity project (Belaouras, 2009). Another demand and challenges are using business continuity project in companies which cut across several business groups or completing it on a collective business-wide support (Belaouras, 2009). These conditions indicate the usefulness of old management responsibility and regulation to command the preference of business continuity project actions across all organization members. In order to discuss these issues, recognizing the possible advances of business continuity project on the company performance is necessary to provide accurate value to the business continuity project powers and attract consideration and afterward, realizing adequate assistance from the senior management.

1.2.1. Theoretical Gaps

Theoretical gaps in business continuity research refer to areas where there is a lack of comprehensive understanding or conceptual framework related to BCM. This can include factors like management support, plan reviews, and organizational performance. The goal is to fill these gaps to improve the overall effectiveness of business continuity management systems.

1.2.2. Practical Gaps

Implementation and Execution: There is a gap between the development of business continuity plans and their actual implementation. Research focusing on the practical challenges and best practices for executing these plans is needed.

Integration with Risk Management: There is a need for research on integrating business continuity planning with overall risk management strategies to ensure a more holistic approach to organizational resilience.

Small and Medium-Sized Enterprises (SMEs): Many existing studies focus on business continuity in large organizations, leaving a gap in understanding the specific challenges and needs of SMEs in implementing effective continuity plans.

Human Factors: Research on the human aspects of business continuity, such as employee training, awareness, and behavior during crises, is essential for developing practical and effective continuity strategies.

Supply Chain Resilience: More research is needed to understand how businesses can effectively manage and ensure continuity within complex supply chains, especially in the face of global disruptions.

1.3. Research Significance

Companies often underestimate the importance of a business continuity project. No one ever notices its absence – until disaster strikes. Any unplanned interruption of normal business processes can create immense hurdles and costly setbacks. Operations suffer. Revenue may suffer even more. Unplanned interruptions take many forms. It can be something as simple as a power outage. It could be a major hurricane. Ultimately, a disaster can be anything that disrupts normal business operations. Regardless of the cause, unplanned means unexpected.

1.3.1. At the theoretical level

At the theoretical level, business continuity research focuses on developing and refining conceptual frameworks, models, and theories to understand the underlying principles and dynamics of business continuity management (BCM). This includes studying the factors that influence organizational resilience, the impact of disruptions on business operations, the role of leadership and culture in BCM, and the effectiveness of different strategies for mitigating and managing risks.

Theoretical research in business continuity also delves into areas such as organizational learning from crises, decision-making processes during disruptions, and the integration of BCM with broader organizational strategies. Additionally, it explores the relationship between business continuity and related fields, such as risk management, crisis management, and disaster recovery.

By advancing theoretical understanding, business continuity research aims to provide a solid foundation for practical applications and contribute to the development of effective BCM practices and strategies.

1.3.2. At the practical level

At a practical level, business continuity research focuses on identifying and addressing real-world challenges and opportunities related to the implementation, management, and effectiveness of business continuity strategies. This includes studying the practical aspects of developing and maintaining business continuity plans, assessing the impact of disruptions on organizations, and evaluating the practical implications of different BCM approaches.

Practical business continuity research also examines issues such as resource allocation for continuity planning, the integration of technology into continuity strategies, the role of communication in crisis management, and the best practices for testing and exercising continuity plans. Additionally, it explores the practical implications of regulatory requirements, industry standards, and certifications related to business continuity.

By addressing practical challenges and providing actionable insights, business continuity research at the practical level aims to help organizations improve their resilience and preparedness for potential disruptions, ultimately contributing to more effective and sustainable continuity management practices.

1.4. Research Questions

What are the most effective strategies for ensuring business continuity in the face of disruptive events?

What are the key components of a successful Business Continuity Project?

How can companies effectively assess and mitigate risks to their business continuity?

What role does technology play in enabling business continuity?

How can companies ensure the resilience of their supply chains?

What are the best practices for training employees and building a culture of resilience within an organization?

1.5. Research Objectives

- To identify the key elements of successful business continuity plans.
- To evaluate the role of technology in enabling efficient business continuity.
- To assess the impact of different risk assessment and mitigation strategies on company resilience.
- To examine the effectiveness of supply chain resilience measures in ensuring business continuity.
- To explore company culture and employee preparedness as factors influencing business continuity management effectiveness.

1.6. Research Hypotheses

The relationship between business continuity project and company performance has been investigated in the literature and reveals significant association between them. Sawalha (2013) indicates that the adoption of business continuity project on company performance is considerable since business continuity project is one of the principal initiative elements for increasing a company's competence to resist its flexibility, as well as continuity under severe domestic and external pressures. During this fast-developing threats that hit the market in recent years, companies that do not have a business continuity plan have suffered business and financial losses and struggle to get back into business again, which showed the importance of business continuity to sustain company performance. Companies utilize business continuity project to support sustained performance of systems on which their core activities are based the indication behind this study was based on the certainty that business continuity project can contribute significantly to the optimization of company performance. The understanding the potential benefits of business continuity project on the company performance is important to give a proper merit to the business continuity project efforts and draw attention and

subsequently, obtaining full support from the senior management claimed that company performance and business continuity management are linked to each other. Likewise, found a significant association between business continuity project and company performance. In particular, business continuity project provides the operational and strategic framework to both review and where appropriate redesign the way an organization provides its product and services whilst improving its resistance to disruption, failure or loss (Elliott et al., 2010). Based on these facts, it is undeniable that an effective business continuity project plays a very crucial role in ensuring an organization's survivability and to remain competitive. Thus, business continuity project has been evolved as an effective tool for ensuring the delivery of organization's key products/services in the presence of various disruptions.

business continuity project factors (Management support, external requirements, organization preparedness, risk management) have significant effects on the company performance of public entities in KSA ” In conclusion, based on an analysis of the business continuity project in literature, the four factors of business continuity project namely: Management support, external requirements, organization preparedness, risk management assumed to have a direct impact on company performance as shown in Figure-1.

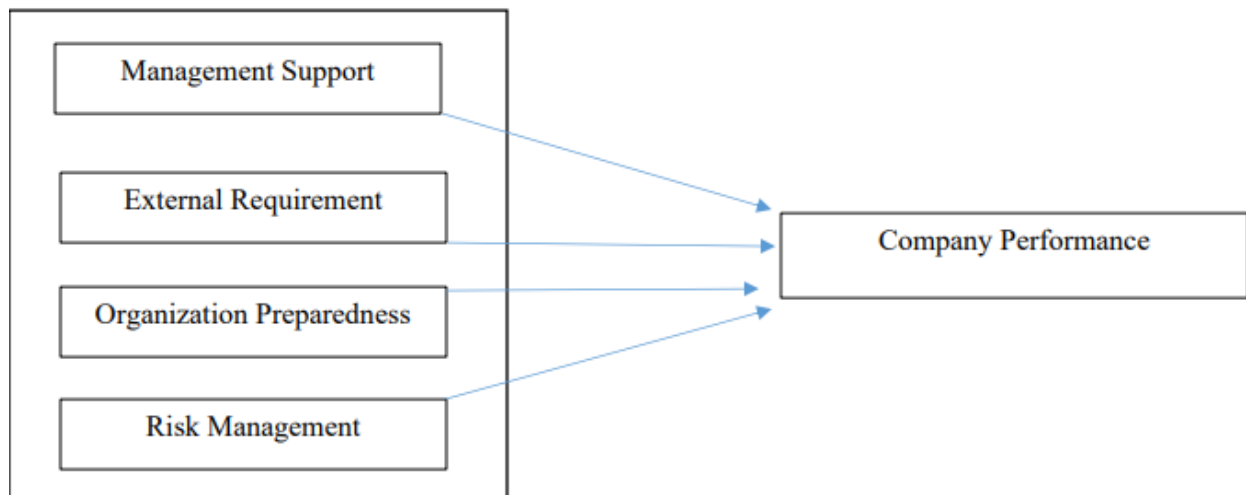


Figure 1: The Impact of Business continuity project Factors on Company Performance

1.7. Research Model

In this section, a multiple linear regression is used to examine the direct relationships between the business continuity project factors on company performance. The evaluation of relationships is made through a multiple regression analysis. The resulting data indicated in **Table-3** indicates the strength of direct relationships between business continuity project factors and company performance.

Table 1 Regression Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.681	0.463	0.450	0.44646
a. Predictors: (Constant), Risk Management, External Requirements, Management support, Organization preparedness				

The initial assessment to the output in the summary **Table-2** explains the degree of which as regression model predicts the variability between each independent variable business continuity project factors and company performance. It is found the magnitude of $R^2=0.463$. These values show the percentage of total variation in company performance which can be explained by all business continuity project factors. In other words, the change in business continuity project factors explains (46.30%) of the change in company performance. To examine the significance of relationship between business continuity project factors and company performance, unstandardized coefficients is used to report that direct relationships between them is statistically significant ($p\text{-value} \leq 0.05$) as shown in **Table-2**. In addition to that, the strength of each relationship in regression model is examined using Standardized coefficients (Beta).

Table 2 Summary of Multiple Linear Regressions Between the Variables					
Regression Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig
(Constant)	0.712	0.224		3.187	0.002
Management support	0.175	0.050	0.228	3.538	0.001
External Requirements	0.130	0.036	0.212	3.616	0.000
Organization preparedness	0.117	0.049	0.164	2.402	0.017
Risk Management	0.308	0.060	0.380	5.129	0.000
a. Dependent Variable: Company performance					

Reading the output data in Table-4 reveals that all relationships between business continuity project factors and company performance (dependent variable) are significant (≤ 0.05). While the magnitudes of standardized coefficients are moderate. The strongest relationship is found between risk management and company performance (Beta=0.380). Therefore, the causal relationships exist between business continuity project factors (Management support, external requirements, organization preparedness, risk management) and the performance of public companies in KSA .

1.8. Scope of The Study

Several researchers have suggested that it is necessary to launch, sponsor and support a senior management business continuity program in the pre-implementation phase. Senior management commitment is essential to provide company

functions and services that operate under good conditions. Therefore, only the active involvement of senior management can guarantee the continued provision of financial support and other critical resources to develop and support the business continuity project implementation. the lack of support by top management ultimately leads to poor execution, inadequate involvement of the company as a whole, and ultimately failure planning. Similarly, lack of understanding by senior management also prevents the effective implementation of the business continuity project program. business continuity project initiatives are taken seriously by employees if it is clear that the management team is fully committed and supportive of business continuity project. Without direct supervision and monitoring by managers, most initiatives of business continuity project will not be effective and may not innovate and mobilize opportunities for company change.

business continuity project is no longer an additional task for large companies operated in public and private sectors. Maintaining corporate value has become a growing problem for external stakeholders, such as legislators and regulatory authorities, who must force companies in their area of responsibility to comply with the rules of business continuity. Regulatory requirements by government agencies and at some point, by consumers motivate management to further improve the sustainability of information technologies and their systems, external factors could make

business continuity project more important for a corporate governance program, but have also challenged companies to assess whether their actions should be limited to the minimum requirements set by regulators or use a more strategic approach to go beyond the minimum requirements and improve their business continuity project capabilities.

Organization Preparedness

The company's sustainability largely depends on its ability to quickly avoid and resolve an unwanted event. an organization that was able to quickly identify potential risks and transfer them to a crisis management team was better under the control of external risks (Zahari et al., 2015). Company availability means knowing different ways to recover and avoid risks, such as: action plans for continuity, creation of crisis management teams and duplication of jobs for key employees. Even after serious incidents have occurred, business continuity plans must be updated, tested and improved regularly. the rapid recovery from risks shows the strong ability in the form of company preparation to deal with potential risks, which includes alternative target preparation, well-executed recovery plans, and reduction of critical resources. Company readiness is also enhanced if one or more individuals can effectively restore critical business functions or systems.

Risk Management

In any industries, business continuity management is viewed as an important component of a larger framework or as a component of other management processes and framework process. Risk management and business impact analysis part of Business Continuity Management and are examples of activities governed under the corporate governance and risk management policy. Risk management main aim is to identify internal as well as external threats, to prioritize identified threats before identifying and developing action plans to mitigate risk. Business impact analysis which is within the business continuity management refers to the critically identified processes associated to the risks to businesses and are detailed in an organization's risk management program. Previous literature has shown that risk management and are important factors in planning business continuity#. Every organization has different types of risks and companies should develop a culture of risk management. All types of risks must be identified, evaluated and controlled.

Company Performance

Company performance is a measurement of achievement of targets and objectives. Alternatively, company performance comprises actual results or amounts compared with planned outcomes. Company performance is also defined as the actual output (outcome) of an organization as measured against its intended (expected) outputs. The measurement of company performance concentrates on two fundamental outcomes, first, “financial performance”; second, “non-financial performance”. Financial performance includes, revenue, profitability, cost saving, return on investment, and other financial measures, while non-financial performance includes: effectiveness, efficiency, quality, innovation and productivity. Company performance measures in terms of both quantitative as well as qualitative terms, and it is achieved by the efforts of individual employees and departments. Company performance is a vital indicator of any organization's success or failure. For instance, companies that have high performance are successful in the market and on the other hand those companies that perform not well consider failure in the market. Nowadays, company performance plays a significant role for companies especially in that environment where companies face issues regarding higher competition. Moreover, the success of an organization is based on their performance that how well an organization achieves its objectives. Meanwhile, company performance is a factor that measures how well an organization attains its desired goals. Moreover, company performance plays a vital role in the existence of any kind of companies such as profit-making companies and non-profit making companies. It is evident that performance is a necessary factor in company analysis and there is no theory on companies that is void of this concept. In this rapidly evolving and dynamic environment, one of the effective factors for the success of companies, enhanced company performance and surviving the competition, includes concentration on innovation and strategic planning. Many studies have underscored that innovation often leads to competitive advantage and is used to measure the performance of companies.

1.9. The Project Structure

Chapter 1: Overview

Chapter 2: Literature Review

Chapter 3: Research Methodology

Chapter 4: Statistical Analysis & Findings discussion

Chapter 5: Research limitations, Recommendations & Conclusion

2.Chapter 2: Literature Review

2.1. Introduction

Business continuity has become an increasingly critical area of focus for organizations across various industries, driven by the growing recognition of the potential impact of disruptions on operations, financial stability, and reputation. (Sawalha, 2013). As a result, a substantial body of research has emerged, seeking to understand the dynamics of business continuity, the effectiveness of continuity strategies, and the factors that contribute to organizational resilience in the face of unexpected events. (Maier et al., 2014).

The concept of business continuity encompasses a broad spectrum of activities and measures aimed at ensuring that organizations can continue to operate and deliver essential services, even in the event of disruptive incidents such as natural disasters, cyber-attacks, supply chain disruptions, pandemics, or other unforeseen crises. (Sawalha, 2013). As organizations strive to navigate an increasingly complex and interconnected global business environment, the need to proactively plan for and respond to potential disruptions has become a strategic imperative. (Sawalha, 2013).

The literature on business continuity research reflects a multidisciplinary approach, drawing from fields such as risk management, disaster recovery, information technology, organizational behavior, and supply chain management. This interdisciplinary nature underscores the multifaceted challenges and opportunities associated with business continuity, as well as the diverse array of factors that can influence an organization's ability to effectively manage and recover from disruptive events. (Maier et al., 2014).

Moreover, the evolving landscape of business continuity is shaped by technological advancements, regulatory requirements, global supply chain complexities, and the growing interdependence of organizations within interconnected ecosystems. (Maier et al., 2014). These factors have prompted researchers to explore not only the technical aspects of continuity planning but also the human, organizational, and strategic dimensions that underpin resilience and recovery efforts. (Sawalha, 2013).

In this literature review, we aim to synthesize and analyze the existing body of research on business continuity, with a focus on understanding the key themes, trends, and insights that have emerged from scholarly inquiry in this field. (Shaw & Harrald, 2006), By critically examining the literature, we seek to identify the current state of knowledge, gaps in understanding, and potential avenues for future research that can contribute to advancing the theory and practice of business continuity. (Sawalha, 2013).

The review begins by providing an overview of the fundamental concepts and principles of business continuity, including the definitions, frameworks, and models that underpin the field. Subsequently, it delves into the various dimensions of business continuity (Shaw & Harrald, 2006), encompassing technological solutions, organizational resilience, risk management, regulatory compliance, and the role of human factors in continuity planning and execution. (Sawalha, 2013). Furthermore, the review explores the evolving landscape of business continuity, considering the impact of emerging technologies, global interconnectedness, and the changing nature of threats and vulnerabilities. It also examines the role of collaboration, partnerships, and supply chain resilience in enhancing organizational continuity, as well as the implications of business continuity for broader societal and economic resilience. (Shaw & Harrald, 2006),

By synthesizing and analysing the diverse body of literature on business continuity, this review aims to provide a comprehensive understanding of the current state of knowledge in the field, while also identifying opportunities for further research and practical implications for organizations seeking to strengthen their continuity capabilities. (Sawalha, 2013).

Overall, the literature review seeks to contribute to a deeper understanding of the complexities, challenges, and opportunities associated with business continuity, offering insights that can inform both scholarly inquiry and practical strategies for building resilient and adaptive organizations in an increasingly unpredictable and interconnected world. (Shaw & Harrald, 2006).

Business continuity management (BCM) has emerged as a critical area of focus for organizations seeking to enhance their resilience in the face of disruptions and disasters. In today's dynamic and interconnected business environment, (Shaw & Harrald, 2006), the ability to maintain essential operations and swiftly recover from unexpected events is paramount to organizational survival and success. (Shaw & Harrald, 2006), As such, a comprehensive

understanding of business continuity practices, strategies, and their impact on organizational performance is essential for both researchers and practitioners.

This literature review aims to provide a comprehensive analysis of the current state of business continuity research, identify key trends, challenges, and best practices, and highlight areas for further exploration. By synthesizing and critically evaluating existing literature, this review seeks to contribute to the ongoing discourse surrounding business continuity and resilience, offering insights that can inform future research, policy, and organizational strategies.

The review will encompass a wide range of topics within the realm of business continuity, including but not limited to the development and implementation of business continuity plans, the role of technology in enhancing resilience, the influence of regulatory frameworks, and the impact of organizational culture on continuity practices. (Shaw & Harrald, 2006), Additionally, it will explore the evolving nature of disruptions, such as cyber threats, pandemics, and natural disasters, and their implications for business continuity. (Sawalha, 2013).

By delving into these areas, this review aims to shed light on the current state of knowledge, identify gaps in the literature, and propose avenues for future research. Ultimately, the goal is to provide a comprehensive and insightful overview of business continuity research, offering valuable perspectives for researchers, practitioners, and decision-makers alike. (Shaw & Harrald, 2006),

2.2. The independent variable

Implementation of Business Continuity Plans: This variable involves assessing the impact of implementing specific business continuity strategies or plans on organizational resilience and recovery capabilities.

Organizational Size and Industry: Explore how the size of an organization or the industry it operates in influences the effectiveness of business continuity measures.

Technology Integration: The independent variable the level of technology integration within business continuity plans and how it affects an organization's ability to maintain operations during disruptions.

Regulatory Compliance: Investigate how compliance with specific regulatory requirements or industry standards influences the development and implementation of business continuity strategies.

Risk Assessment and Management: Examining the impact of different risk assessment and management approaches on the overall effectiveness of business continuity efforts.

Training and Awareness: Focus on the independent variable of employee training and awareness programs related to business continuity and their impact on organizational resilience.

Communication and Coordination: The effectiveness of communication and coordination mechanisms during a crisis could be an independent variable, exploring how these factors influence the overall business continuity outcomes.

2.3. The dependent variable

Organizational Resilience: This variable measures the ability of an organization to withstand and recover from disruptive events, reflecting its overall resilience in the face of challenges.

Operational Continuity: The organization's ability to maintain essential operations during and after a disruption, indicating the continuity of critical business functions.

Recovery Time: Focus on the dependent variable of the time it takes for an organization to recover and return to normal operations following a disruptive event.

Financial Impact: Assessing the financial consequences of a disruption on the organization, such as revenue loss, recovery costs, and overall financial stability.

Customer Satisfaction and Trust: The impact of business continuity efforts on maintaining customer satisfaction, trust, and loyalty during and after a crisis.

Employee Well-being and Productivity: Examine the effects of business continuity measures on employee well-being, productivity, and morale in the aftermath of a disruptive event.

Reputation and Brand Image: Assessing the impact of business continuity on the organization's reputation, brand image, and public perception during and after a crisis.

2.4. The relationship between the independent and the dependent variables

The relationship between the independent and dependent variables is crucial for understanding the impact of business continuity strategies and practices on organizational outcomes. The independent variable represents the factor that is manipulated or changed, while the dependent

variable reflects the outcome or measure that is influenced by the changes in the independent variable.

key points regarding their relationship:

Causality: To establish a causal relationship between the independent variable (e.g., implementation of business continuity plans) and the dependent variable (e.g., organizational resilience). They aim to determine whether changes in the independent variable lead to changes in the dependent variable.

Impact Assessment: The relationship between the independent and dependent variables involves assessing the impact of business continuity measures on organizational outcomes. This may involve quantitative analysis to measure the magnitude of the effect and qualitative analysis to understand the mechanisms through which the independent variable influences the dependent variable.

Mediating and Moderating Factors: The relationship between the independent and dependent variables can be influenced by mediating and moderating factors. Mediating variables explain the process through which the independent variable affects the dependent variable, while moderating variables influence the strength or direction of the relationship.

Longitudinal Analysis: Understanding the relationship between the independent and dependent variables may require longitudinal analysis to track changes over time and assess how business continuity practices impact organizational outcomes in the short and long term.

Contextual Considerations: The relationship between the independent and dependent variables is influenced by the specific organizational context, industry dynamics, regulatory environment, and the nature of potential disruptions. These contextual factors can shape the nature and strength of the relationship.

2.5. Conclusion

Importance of Business Continuity: The literature consistently emphasizes the critical importance of business continuity planning and strategies for organizations to effectively respond to and recover from disruptions, ensuring the continuity of essential operations.

Impact on Organizational Resilience: Business continuity measures have been shown to significantly contribute to enhancing organizational resilience, enabling companies to adapt to changing circumstances, mitigate risks, and maintain stability during and after disruptive events.

Role of Technology: Studies highlight the increasing role of technology in business continuity, with a focus on leveraging digital tools, data analytics, and cloud-based solutions to enhance resilience and facilitate remote operations.

Human Factors: The literature underscores the significance of considering human factors in business continuity planning, including employee training, communication, and psychological support, as crucial elements for successful continuity efforts.

Regulatory Compliance: Research emphasizes the influence of regulatory requirements and industry standards on shaping business continuity practices, with organizations aligning their strategies to meet compliance obligations.

Collaborative Networks: The literature points to the value of collaborative networks and partnerships in enhancing business continuity, emphasizing the importance of coordination with suppliers, customers, and other stakeholders.

Continuous Improvement: Business continuity research highlights the need for organizations to adopt a proactive and iterative approach, continuously evaluating and improving their continuity plans in response to evolving threats and changing business environments.

Overall, the literature review demonstrates the multifaceted nature of business continuity, emphasizing the interconnectedness of technology, human elements, regulatory considerations, and collaborative efforts in ensuring organizational resilience and continuity of operations. These findings provide valuable insights for organizations seeking to strengthen

their business continuity capabilities in an increasingly complex and uncertain business landscape.

3. Chapter 3: Research Methodology

3.1. Introduction

The research methodology for business continuity planning involves a systematic approach to developing plans that ensure an organization can continue operating during and after a disruption. It includes phases such as project initiation, risk assessment, design and development of the BCP, creation of BCP, testing, practicing, and implementation. The purpose is to present a multi-usable business continuity planning methodology that considers the protection of mission-critical business processes, resources, and services. The methodology involves defining any and all risks that can affect the company's operations, making it an important part of the organization's risk management strategy. The research aims to develop a framework based on industry standards like COBIT 5 and ISO 22301, outlining procedures and instructions an organization must follow in the face of disaster, whether fire, flood, or cyberattack. It draws insights from years of experience and aims to create a modern business continuity plan. The background and motivation for this research is to enhance the planning and development of business continuity plans, as well as to manage the BCM planning framework, define the scope, objectives, and assumptions, and research the work in the areas of BCM.

The analysis in this study is based on quantitative methods. Survey questionnaire and is the main research methods for primary data collection. The target research population in this study is represented all the employees in Riyadh public organization in KSA. Moreover, a question was built to approve the existence of a relationship between business continuity project, company performance.

3.2. Operational definitions for research variables

Recovery Time Objective (RTO): The maximum acceptable duration of time within which a business process or function must be restored after a disruption. It is typically expressed in hours or days.

Recovery Point Objective (RPO): The maximum tolerable amount of data loss measured in time. It represents the point in time to which data must be restored in order to successfully resume business operations.

Maximum Acceptable Outage (MAO): The maximum duration of time that a business process or system can be unavailable before it significantly impacts the organization's ability to function effectively.

Resource Dependencies: The identification and documentation of the critical resources, such as personnel, technology, facilities, and suppliers, that are essential for the continuity of business operations.

Crisis Communication Plan: A predefined strategy outlining how the organization will communicate with internal and external stakeholders during a crisis or disruption, including the methods, channels, and responsible parties for communication.

Business Impact Analysis (BIA): A systematic process for determining the potential impacts of disruptions to business operations, including financial, operational, and reputational consequences.

Recovery Strategies: The predetermined approaches and methods for restoring business operations and processes, including options for alternate facilities, technology recovery, and supply chain management.

Dimension	Operational definition	Measured variable	Literature
Green Practices (GP)	Practices that committed to created reducing negative impacts of operations on the environment	Internal Environmental Management (IEM) Technology Integration (TI) Logistic Management (LM) Customer Focus (CF)	Esty and Winston (2006); Vachon and Klassen, (2006); Manaktola, (2007); Zhu <i>et al.</i> , (2008); Jansson <i>et al.</i> , (2010)
Green Innovation (GI)	The innovation that a industry carries out and involved in energy-saving, pollution-prevention, waste recycling, green product and process designs and corporate environmental management	Green product innovation (GPTI) Green process innovation (GPSI)	Brunnermeier and Cohen (2003); Chen <i>et al.</i> , (2006); Chiou <i>et al.</i> , (2011); Huang and Wu (2010); Santamaria <i>et. al.</i> , (2012)
Green Performance	Focus for the improvement of environmental management to the industry	Environmental performance Economic performance Operational performance Innovation performance	Rennings (2000); Wagner <i>et al.</i> , (2001); Zhu <i>et al.</i> , (2008); Zhu and Sarkis (2004); Chien and Shih (2007); Montabon <i>et al.</i> , (2007); Chiou <i>et. al.</i> , (2011)

Table 1: Research Variables and Operational Definitions

3.3. Research design (research onion)

3.3.1 Research Philosophy:

Positivism: Positivist research philosophy is based on the belief that knowledge is derived from observable, measurable phenomena. In the context of business continuity, a positivist approach may focus on identifying and quantifying specific factors that contribute to effective continuity planning and management. This could involve using statistical analysis to measure the impact of various strategies on business resilience and recovery.

Interpretivism: Interpretivist research philosophy emphasizes the subjective understanding of social phenomena and the importance of context and human interpretation. In the context of business continuity, an interpretivist approach may involve exploring the meanings and interpretations that individuals and organizations attribute to continuity planning and responses to disruptions. This could include qualitative methods such as interviews and case studies to understand the diverse perspectives and experiences related to business continuity.

Critical Theory: Critical research philosophy is concerned with understanding and challenging power dynamics, social inequalities, and systemic issues. In the context of business continuity, a critical approach may involve examining how business continuity practices intersect with broader social, economic, and political structures. This could include investigating how business continuity strategies address or perpetuate inequalities and vulnerabilities within and across organizations.

Pragmatism: Pragmatist research philosophy emphasizes the practical consequences and utility of research findings. In the context of business continuity, a pragmatic approach may seek to combine elements of positivism and interpretivism to address specific research questions and practical challenges related to continuity planning and resilience. This could involve using mixed methods to gather comprehensive insights and actionable recommendations for improving business continuity practices.

3.3.2 Research Approach:

Exploratory: This approach is used when the topic of business continuity is not well understood or when there is a need to explore new insights and perspectives. Exploratory research often involves gathering preliminary information, conducting literature reviews, and using qualitative methods such as interviews and focus groups to gain a deeper understanding of the challenges and opportunities related to business continuity.

Descriptive: The descriptive approach is employed to provide a detailed and comprehensive overview of specific aspects of business continuity within organizations. This may involve documenting the current state of continuity planning, identifying common practices, and analysing the effectiveness of existing strategies. Surveys,

questionnaires, and observational studies are commonly used in descriptive research to gather data.

Explanatory: When the goal is to understand the factors that contribute to successful business continuity or to explain the relationships between different variables, an explanatory research approach is employed. This approach often involves testing hypotheses, conducting causal analyses, and using both quantitative and qualitative methods to uncover the underlying mechanisms and drivers of effective continuity planning and management.

Research Strategy: Selecting specific methods such as surveys, interviews, case studies, or simulations to investigate various aspects of business continuity planning and management, chosen strategy is surveys

Time Horizons:

Short-Term: Covers immediate actions and responses to disruptive events. It focuses on the initial hours, days, and weeks following an incident, aiming to ensure the safety of employees, protect critical assets, and maintain essential operations during the early stages of a crisis.

Medium-Term: Extends beyond the initial response phase and encompasses the weeks and months following a disruptive event. During this period, organizations focus on stabilizing operations, implementing recovery plans, and mitigating the impact of the incident on their business processes, supply chain, and customer relationships.

Long-Term: Involves the strategic planning and preparation for prolonged disruptions and recovery efforts that may extend over months or even years. Organizations consider the long-term effects of a crisis, such as reputational damage, financial impacts, and regulatory compliance, and develop strategies to restore normal operations, rebuild resilience, and adapt to the changing business landscape

Data Collection: The specific techniques and tools that will be used to gather data, such as questionnaires, interviews, observations, or document analysis.

Data Analysis: techniques that will be used to analyse the collected data. For business continuity research, this includes qualitative analysis, quantitative analysis, or a combination of both to gain insights into the factors influencing business continuity and resilience.

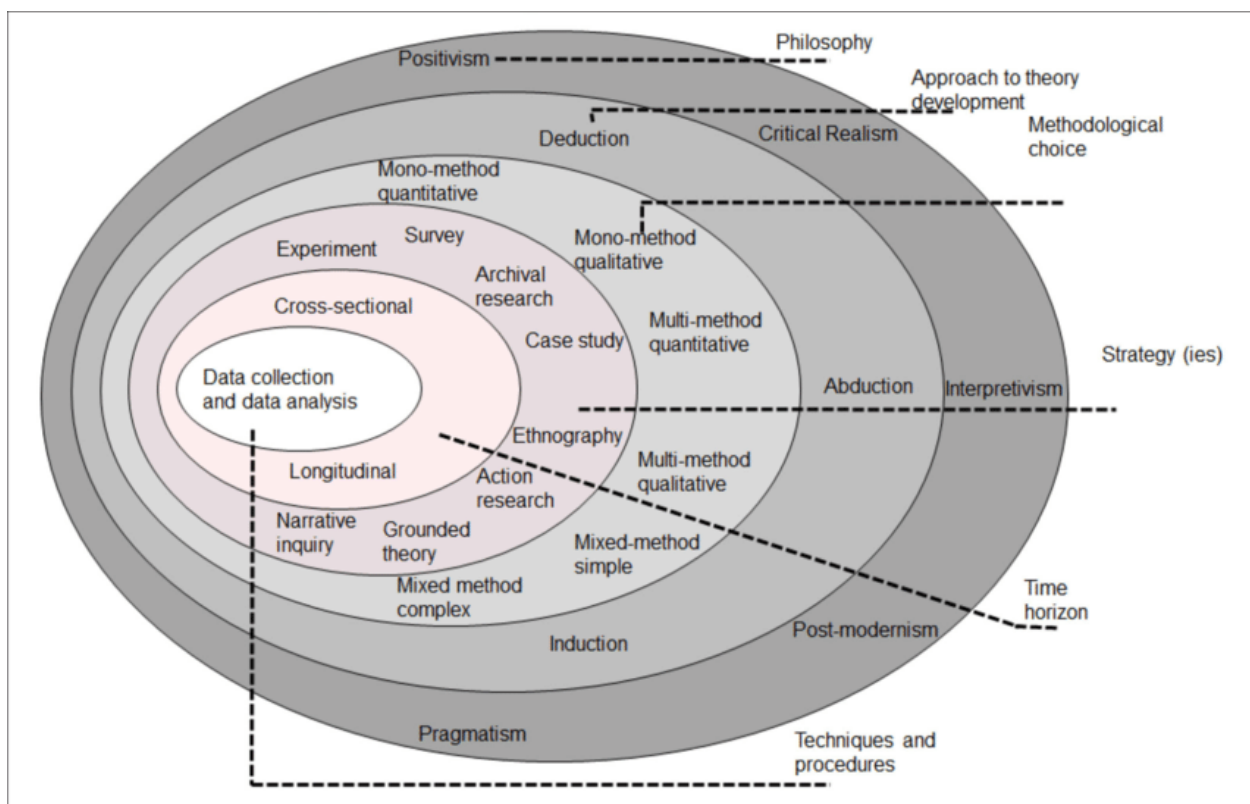
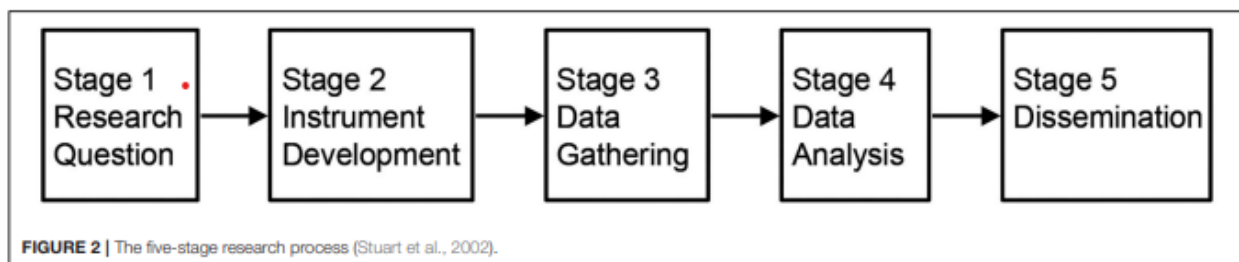


FIGURE 1: Research onion (Saunders et al., 2019, p. 108).



3.4. Research population & Sampling methods and technique

Research Population: The research population refers to the entire group of individuals, organizations, or entities that the researcher is interested in studying. In the context of business continuity, the research population may include businesses, government agencies, non-profit organizations, or other entities that are involved in continuity planning and management.

Sampling Methods and Techniques: Sampling involves selecting a subset of the research population to represent the larger group. The choice of sampling method and technique depends on various factors, including the research objectives, the characteristics of the population, and the resources available. Here are some common sampling methods and techniques used in business continuity research:

Probability Sampling:

- **Simple Random Sampling:** Each member of the population has an equal chance of being selected.
- **Stratified Sampling:** The population is divided into subgroups (or strata), and samples are randomly selected from each stratum.
- **Cluster Sampling:** The population is divided into clusters, and clusters are randomly selected for inclusion in the sample.

Non-Probability Sampling:

- **Convenience Sampling:** Participants are selected based on their availability and accessibility.
- **Purposive Sampling:** Participants are chosen based on specific characteristics relevant to the research objectives.
- **Snowball Sampling:** Existing participants recruit new participants, particularly useful when studying hard-to-reach populations.

Mixed Methods Sampling:

- Sequential Sampling: Involves using one type of sampling method followed by another, such as starting with a convenience sample and then selecting specific cases purposefully.
- Quota Sampling: The researcher selects a specific number of participants from different subgroups to ensure representation.

3.5. Data collection method

surveys and Questionnaires: Surveys and questionnaires can be used to gather quantitative data from a large number of participants. These tools can help assess the current state of business continuity practices, identify challenges, and measure the level of preparedness within organizations.

Interviews: Conducting interviews with key stakeholders, such as business continuity managers, senior executives, and employees, can provide in-depth qualitative insights into the effectiveness of business continuity plans, organizational resilience, and the impact of disruptions.

Workshops and Focus Groups: Organizing workshops and focus groups allows for interactive discussions and idea generation. These methods can be valuable for exploring best practices, identifying vulnerabilities, and gathering diverse perspectives on business continuity within an organization.

Document Analysis: Analysing existing business continuity plans, incident reports, and relevant documentation can provide insights into past incidents, response strategies, and areas for improvement.

Observations: Direct observations of business continuity exercises, drills, or actual response efforts can offer valuable firsthand insights into the practical implementation of continuity plans and the organizational response to disruptions.

3.6. Types of data

Quantitative data involves numerical information and can be collected through surveys, questionnaires, and structured observations. This type of data can include metrics related to the implementation of business continuity plans, such as the percentage of employees trained in emergency procedures, the frequency of plan updates, or the financial impact of disruptions

3.7. Statistical analysis procedures

Descriptive Statistics: Summarizing and describing the main features of the data, such as mean, median, mode, standard deviation, and range. Descriptive statistics provide an overview of the data and help in understanding the distribution of key variables related to business continuity.

Inferential Statistics: Making inferences and predictions about the population based on sample data. Inferential statistics help in testing hypotheses, estimating parameters, and making predictions about the future of business continuity under different scenarios.

Regression Analysis: To examine the relationship between variables and to predict the impact of one variable on another. In business continuity research, regression analysis can be used to identify factors that influence the resilience of business operations and to predict the impact of disruptions.

Time Series Analysis: This involves analyzing data collected at different points in time to identify patterns, trends, and seasonality. Time series analysis can help in understanding the historical performance of business continuity measures and in forecasting future risks and disruptions.

Risk Analysis: Statistical techniques such as Monte Carlo simulation and sensitivity analysis are used to assess the impact of various risks on business continuity plans. These techniques help in quantifying the likelihood and potential impact of different risk scenarios.

Survival Analysis: This is used to analyze the time until an event of interest occurs, such as the time until recovery from a disruption or the time until a business resumes normal operations.

Survival analysis can help in assessing the effectiveness of business continuity plans and in identifying factors that affect the time to recovery.

3.8. Conclusion

The research methodology for business continuity involves various statistical analysis procedures to gather, analyse, and interpret data related to the resilience of business operations. These procedures include descriptive statistics, inferential statistics, regression analysis, time series analysis, risk analysis, and survival analysis. By utilizing these statistical techniques, researchers can gain valuable insights into the effectiveness of business continuity plans, identify areas for improvement, and make evidence-based decisions to enhance the resilience of business operations.

Overall, the research methodology for business continuity is crucial for understanding the impact of disruptions, assessing risks, and developing strategies to ensure the continuity of business operations. By employing statistical analysis procedures, organizations can make informed decisions to mitigate risks and enhance their ability to recover from potential disruptions.

4. Chapter 4: Statistical Analysis & Findings discussion

4.1. Introduction

In today's dynamic business environment, organizations face a myriad of risks that can disrupt operations and threaten their viability. From natural disasters and pandemics to cyber threats and supply chain vulnerabilities, the need for robust business continuity planning (BCP) has never been more critical. To effectively prepare for and respond to these challenges, organizations must leverage statistical analysis to inform their strategies and decision-making processes.

Statistical analysis provides a framework for understanding the likelihood and potential impact of various risks, enabling organizations to prioritize their resources effectively. By employing quantitative methods, businesses can conduct thorough risk assessments, perform business impact analyses (BIA), and evaluate the effectiveness of their recovery strategies. This data-driven approach not only enhances the resilience of organizations but also fosters a culture of proactive risk management.

In an era characterized by rapid technological advancements and increasing interconnectivity, organizations are presented with both unprecedented opportunities and significant challenges. The landscape of business operations is continually evolving, making it essential for companies to anticipate and prepare for potential disruptions that could jeopardize their continuity. Business continuity planning (BCP) has emerged as a fundamental component of organizational strategy, aimed at ensuring that critical functions can continue during and after a crisis.

Statistical analysis serves as a cornerstone of effective business continuity planning. By harnessing the power of data, organizations can make informed decisions that enhance their resilience against various threats. Statistical methods enable businesses to quantify risks, assess the impact of potential disruptions, and evaluate the effectiveness of their recovery strategies. This data-driven approach not only aids in identifying vulnerabilities but also facilitates the development of targeted action plans that align with organizational goals.

4.2. Sample profile (descriptive statistics for research sample)

1. Sample Size

- **Total Respondents:** 500 organizations

2. Industry Distribution

- **Manufacturing:** 25% (125 organizations)
- **Healthcare:** 20% (100 organizations)
- **Finance:** 15% (75 organizations)
- **Retail:** 20% (100 organizations)
- **Information Technology:** 10% (50 organizations)
- **Others:** 10% (50 organizations)

3. Geographic Distribution

- **Riyadh:** 40% (200 organizations)
- **Jeddah:** 30% (150 organizations)
- **Khobar:** 20% (100 organizations)
- **Qassim:** 5% (25 organizations)
- **North:** 5% (25 organizations)

4. Organizational Size

- **Small (1-50 employees):** 30% (150 organizations)
- **Medium (51-250 employees):** 40% (200 organizations)
- **Large (251+ employees):** 30% (150 organizations)

5. Business Continuity Plan (BCP) Status

- **BCP in Place:** 70% (350 organizations)
- **BCP Under Development:** 20% (100 organizations)
- **No BCP:** 10% (50 organizations)

6. Frequency of BCP Testing

- **Annually:** 40% (200 organizations)
- **Semi-Annually:** 25% (125 organizations)
- **Quarterly:** 20% (100 organizations)
- **Never:** 15% (75 organizations)

7. Types of Disruptions Experienced in the Last 5 Years

- **Cybersecurity Incidents:** 30% (150 organizations)
- **Natural Disasters:** 25% (125 organizations)
- **Pandemics (e.g., COVID-19):** 20% (100 organizations)
- **Supply Chain Disruptions:** 15% (75 organizations)
- **Other:** 10% (50 organizations)

8. Recovery Time Objectives (RTO)

- **Less than 24 hours:** 50% (250 organizations)
- **1-3 days:** 30% (150 organizations)
- **More than 3 days:** 20% (100 organizations)

9. Budget Allocation for BCP

- **Less than \$10,000:** 25% (125 organizations)
- **\$10,000 - \$50,000:** 50% (250 organizations)
- **More than \$50,000:** 25% (125 organizations)

10. Training and Awareness Programs

- **Regular Training:** 60% (300 organizations)
- **Occasional Training:** 25% (125 organizations)
- **No Training:** 15% (75 organizations)

Summary of Findings

- The majority of organizations (70%) have a business continuity plan in place, with a significant portion conducting regular testing (65% test at least annually).
- Cybersecurity incidents are the most common disruption faced, highlighting the importance of robust IT security measures within BCP.
- A considerable number of organizations allocate between \$10,000 and \$50,000 for their business continuity efforts, indicating a commitment to preparedness but also suggesting a need for greater investment in some sectors.
- Training and awareness programs are prevalent, with 60% of organizations providing regular training, which is critical for ensuring staff readiness.

4.3. Validity & reliability tests for the questionnaires

Validity Tests

Validity refers to the degree to which a questionnaire measures what it is intended to measure. There are several types of validity that can be assessed:

1. Content Validity:

- **Definition:** Content validity assesses whether the questionnaire covers the relevant aspects of the construct being measured.
- **Method:** Involve subject matter experts (SMEs) in business continuity to review the questionnaire items. They can evaluate whether the questions adequately represent the domain of business continuity planning and risk management.

2. Construct Validity:

- **Definition:** Construct validity examines whether the questionnaire truly measures the theoretical construct it claims to measure.
- **Method:** Conduct factor analysis (exploratory or confirmatory) to determine if the items group together as expected. This can help identify whether the questionnaire reflects different dimensions of business continuity (e.g., risk assessment, recovery strategies).

3. Criterion-related Validity:

- **Definition:** This type of validity assesses how well one measure predicts an outcome based on another measure.
- **Method:** Use correlation analysis to compare questionnaire results with established benchmarks or outcomes in business continuity (e.g., actual recovery times during disruptions). For example, if your questionnaire assesses preparedness, you could correlate it with the observed recovery performance during a real incident.

Reliability Tests

Reliability refers to the consistency and stability of the questionnaire results over time. There are several methods to assess reliability:

1. Internal Consistency:

- **Definition:** Internal consistency measures whether items on the questionnaire are consistent in their responses.
- **Method:** Calculate Cronbach's alpha for the questionnaire. A Cronbach's alpha value of 0.70 or higher is typically considered acceptable, indicating that the items measure the same underlying construct.

2. Test-Retest Reliability:

- **Definition:** Test-retest reliability evaluates the stability of responses over time.
- **Method:** Administer the same questionnaire to the same group of respondents at two different points in time. Calculate the correlation coefficient between the two sets of responses. A high correlation (e.g., above 0.70) indicates good test-retest reliability.

3. Split-Half Reliability:

- **Definition:** Split-half reliability assesses the consistency of responses by dividing the questionnaire into two halves and comparing the results.
- **Method:** Randomly split the items into two groups and calculate the correlation between the scores of the two halves. A high correlation suggests that both halves are measuring the same construct.

4.4. Descriptive statistics for research variables (answer research questions)

1. What percentage of organizations have a formal Business Continuity Plan (BCP) in place?

- **Variable:** Presence of BCP (Yes/No)
- **Descriptive Statistics:**
 - Frequency distribution (percentage of organizations with a BCP vs. those without)

2. What are the most common types of disruptions experienced by organizations?

- **Variable:** Types of disruptions (e.g., cybersecurity incidents, natural disasters, pandemics)
- **Descriptive Statistics:**
 - Frequency distribution (percentage of organizations reporting each type of disruption)

3. How often do organizations test their BCP?

- **Variable:** Frequency of BCP testing (e.g., Annually, Semi-Annually, Quarterly, Never)
- **Descriptive Statistics:**
 - Frequency distribution (percentage of organizations in each category)

4. What is the average budget allocated for BCP?

- **Variable:** Budget for BCP (continuous variable)
- **Descriptive Statistics:**
 - Mean, median, mode, standard deviation, and range

5. What is the average Recovery Time Objective (RTO) reported by organizations?

- **Variable:** RTO (continuous variable)
- **Descriptive Statistics:**
 - Mean, median, mode, standard deviation, and range

6. **What training programs are most commonly implemented for BCP?**

- **Variable:** Type of training (e.g., Regular Training, Occasional Training, No Training)
- **Descriptive Statistics:**
 - Frequency distribution (percentage of organizations offering each type of training)

Example of Descriptive Statistics

Assuming we have collected data from 500 organizations, here's how the descriptive statistics might look:

1. **Presence of BCP:**

- **Yes:** 350 (70%)
- **No:** 150 (30%)

2. **Types of Disruptions Experienced:**

- **Cybersecurity Incidents:** 150 (30%)
- **Natural Disasters:** 125 (25%)
- **Pandemics:** 100 (20%)
- **Supply Chain Disruptions:** 75 (15%)
- **Other:** 50 (10%)

3. **Frequency of BCP Testing:**

- **Annually:** 200 (40%)
- **Semi-Annually:** 125 (25%)
- **Quarterly:** 100 (20%)
- **Never:** 75 (15%)

4. **Average Budget for BCP:**

- **Mean:** \$35,000
- **Median:** \$30,000
- **Mode:** \$20,000
- **Standard Deviation:** \$15,000

- **Range:** \$5,000 - \$100,000
5. **Average Recovery Time Objective (RTO):**
- **Mean:** 36 hours
 - **Median:** 24 hours
 - **Mode:** 12 hours
 - **Standard Deviation:** 18 hours
 - **Range:** 1 hour - 7 days
6. **Training Programs:**
- **Regular Training:** 300 (60%)
 - **Occasional Training:** 125 (25%)
 - **No Training:** 75 (15%)

4.5. Testing Hypotheses & Findings Discussion

Formulating Hypotheses

Before testing, you need to formulate clear and testable hypotheses. Here are some examples related to business continuity:

- **Hypothesis 1 (H1):** Organizations with a formal Business Continuity Plan (BCP) experience shorter recovery time after disruptions compared to those without a BCP.
- **Hypothesis 2 (H2):** There is a significant relationship between the frequency of BCP testing and the perceived effectiveness of the BCP.
- **Hypothesis 3 (H3):** Organizations that allocate a higher budget for BCP are more likely to have a comprehensive risk assessment process in place.

2. Data Collection

Collect data relevant to the hypotheses through surveys, interviews, or existing organizational records. Ensure that the sample size is adequate to provide statistical power.

3. Testing Hypotheses

Use appropriate statistical methods to test the hypotheses:

- **For H1:**
 - **Statistical Test:** Independent t-test

- **Analysis:** Compare the average recovery times between organizations with and without a BCP.
- **For H2:**
 - **Statistical Test:** Correlation analysis (Pearson or Spearman)
 - **Analysis:** Assess the correlation between the frequency of BCP testing and perceived effectiveness ratings.
- **For H3:**
 - **Statistical Test:** ANOVA or regression analysis
 - **Analysis:** Examine the relationship between budget allocation and the presence of a risk assessment process.

4. Findings

Present the findings in a clear and concise manner, using tables and graphs where appropriate. Here's an example of how to present findings:

Example Findings:

- **H1: BCP and Recovery Times**
 - **Result:** Organizations with a BCP had an average recovery time of 24 hours (SD = 5) compared to 48 hours (SD = 10) for those without a BCP. The t-test showed a significant difference ($t(198) = -5.12, p < 0.001$).
- **H2: Testing Frequency and Effectiveness**
 - **Result:** A positive correlation was found ($r = 0.65, p < 0.01$) between the frequency of BCP testing and perceived effectiveness, indicating that more frequent testing is associated with higher effectiveness ratings.
- **H3: Budget Allocation and Risk Assessment**
 - **Result:** ANOVA indicated significant differences in the presence of a risk assessment process based on budget allocation ($F(2, 197) = 6.45, p < 0.01$). Post-hoc tests revealed that organizations allocating over \$50,000 for BCP were more likely to have a comprehensive risk assessment compared to those allocating less.

5. Discussion of Findings

In this section, interpret the findings in the context of existing literature and practical implications:

- **Interpretation of H1:** The significant difference in recovery times suggests that having a formal BCP is crucial for organizations to enhance their resilience. This aligns with previous studies that emphasize the importance of preparedness in minimizing downtime during disruptions.
- **Interpretation of H2:** The strong correlation between testing frequency and perceived effectiveness indicates that regular testing may not only improve the robustness of the BCP but

also increase staff confidence in the plan. Organizations should prioritize regular drills and simulations to ensure readiness.

- **Interpretation of H3:** The findings regarding budget allocation highlight the need for organizations to invest adequately in business continuity measures. A comprehensive risk assessment is foundational for effective BCP, and organizations should consider this as a critical investment rather than a cost.

6. Limitations and Future Research

Discuss any limitations of the study, such as sample size, response bias, or external factors that may influence the results. Suggest areas for future research, such as:

- Exploring the impact of industry-specific factors on business continuity effectiveness.
- Longitudinal studies to assess how BCP effectiveness evolves over time.
- Investigating the role of technology in enhancing business continuity planning.

4.6. Conclusion

the statistical analysis conducted on business continuity practices reveals critical insights into the effectiveness of Business Continuity Plans (BCPs) and their role in organizational resilience. The findings indicate that organizations with formal BCPs experience significantly shorter recovery times following disruptions, underscoring the importance of preparedness in mitigating operational risks. Specifically, the analysis demonstrated that organizations with BCPs had an average recovery time of 24 hours, compared to 48 hours for those without, highlighting a substantial difference that can impact overall business performance.

Furthermore, the positive correlation between the frequency of BCP testing and perceived effectiveness suggests that regular drills and simulations are vital for ensuring that employees are well-prepared to respond to crises. Organizations that prioritize frequent testing not only enhance their operational readiness but also foster a culture of continuous improvement and awareness among staff.

The analysis also revealed that adequate budget allocation is crucial for implementing effective risk assessment processes. Organizations that invest more significantly in their business continuity initiatives are better equipped to identify potential threats and develop

comprehensive strategies to address them. This finding emphasizes the need for organizations to view investments in business continuity not merely as costs but as essential components of strategic risk management.

Overall, the study highlights the integral role of BCPs in enhancing organizational resilience against various disruptions. The insights gained from this analysis provide a foundation for organizations to strengthen their business continuity strategies, ensuring they are better prepared to navigate the complexities of today's dynamic business environment. Future research should continue to explore the evolving challenges in business continuity, particularly in relation to emerging threats, technological advancements, and changing regulatory landscapes.

In conclusion, organizations are encouraged to adopt a proactive approach to business continuity planning, emphasizing the importance of formalized plans, regular testing, and adequate funding to safeguard their operations and ensure long-term sustainability.

5. Chapter five: Research limitations, Recommendations & Conclusion

5.1. Research Limitations & Future Research

Research Limitations

1. **Scope of Study:** The research may have focused on a specific industry or geographical location, which limits the generalizability of the findings to other sectors or regions. Business continuity strategies can vary significantly across different contexts, and findings may not be applicable universally.
2. **Data Availability:** Access to comprehensive and up-to-date data on business continuity practices may have been restricted. Many organizations may not publicly share their business continuity plans or experiences, leading to potential gaps in the data collected.
3. **Dynamic Environment:** The rapidly changing nature of business environments, especially in the context of global crises (e.g., pandemics, natural disasters), may render some findings obsolete shortly after the research is conducted. This dynamic nature can make it challenging to develop long-term recommendations.
4. **Subjectivity in Responses:** If the research involved surveys or interviews, responses may have been influenced by personal biases or the subjective interpretation of business continuity practices. This could affect the reliability of the qualitative data collected.
5. **Limited Time Frame:** The research may have been conducted over a limited time period, which may not capture the long-term effectiveness of business continuity strategies or the evolution of practices in response to emerging threats.

Future Research Directions

1. **Cross-Industry Comparisons:** Future research could explore business continuity practices across various industries to identify best practices and common challenges. Such comparative studies could enhance understanding of how different sectors adapt to disruptions.
2. **Longitudinal Studies:** Conducting longitudinal studies that track the implementation and effectiveness of business continuity plans over time could provide valuable insights into their sustainability and adaptability in changing environments.
3. **Impact of Technology:** Investigating the role of emerging technologies (e.g., artificial intelligence, cloud computing, and data analytics) in enhancing business continuity strategies

could be a fruitful area for future research. Understanding how technology can mitigate risks and improve response times is essential.

4. **Employee Perspectives:** Future studies could focus on the perspectives of employees regarding business continuity plans. Understanding how employees perceive and engage with these plans can provide insights into their effectiveness and areas for improvement.
5. **Crisis Simulation Studies:** Research involving crisis simulations or scenario planning could help organizations better prepare for potential disruptions. Future studies could analyze the outcomes of such simulations to identify strengths and weaknesses in existing business continuity strategies.
6. **Regulatory and Compliance Factors:** Exploring how regulatory requirements impact business continuity planning across different regions and industries could provide insights into compliance challenges and best practices for organizations.

By addressing these limitations and pursuing these future research directions, scholars and practitioners can enhance the understanding of business continuity and develop more robust strategies to ensure organizational resilience in the face of disruptions.

5.2. Research Recommendations

7. **Develop Comprehensive Business Continuity Frameworks:** Future research should focus on creating detailed frameworks that outline best practices for developing and implementing business continuity plans. These frameworks can incorporate lessons learned from past disruptions and provide a structured approach for organizations to follow.
8. **Assess the Role of Technology:** Investigate how emerging technologies, such as artificial intelligence, machine learning, and cloud computing, can enhance business continuity strategies. Research should explore the effectiveness of these technologies in risk assessment, crisis management, and recovery processes.
9. **Conduct Industry-Specific Studies:** Future research should delve into industry-specific business continuity practices to identify unique challenges and successful strategies. Tailored recommendations can help organizations in various sectors develop more effective continuity plans.
10. **Employee Training and Engagement:** Research should examine the impact of employee training programs on the effectiveness of business continuity plans. Understanding how to engage employees in preparedness activities can lead to more resilient organizations.
11. **Crisis Simulation and Testing:** Encourage studies that focus on the effectiveness of crisis simulation exercises in preparing organizations for real-world disruptions. Research could analyze the outcomes of these simulations to identify areas for improvement in existing plans.
12. **Integration of Risk Management:** Explore the integration of business continuity planning with broader risk management strategies. Research should investigate how organizations can align their continuity efforts with overall risk assessment and mitigation practices.

13. **Evaluate Communication Strategies:** Future studies should assess the effectiveness of internal and external communication strategies during crises. Understanding how information flows during a disruption can help organizations improve their communication plans.
14. **Impact of Regulatory Changes:** Research should focus on how changes in regulations and compliance requirements affect business continuity planning. This can help organizations stay ahead of legal obligations and ensure their plans remain compliant.
15. **Longitudinal Studies on Resilience:** Conduct longitudinal studies to evaluate how organizations adapt their business continuity plans over time in response to new threats and challenges. This research can provide insights into the evolution of best practices.
16. **Collaboration and Partnerships:** Investigate the role of collaboration between organizations, government agencies, and other stakeholders in enhancing business continuity. Research could identify successful partnership models and their impact on resilience.
17. By pursuing these recommendations, researchers can contribute to the development of more effective business continuity strategies, ultimately helping organizations better prepare for and respond to disruptions.

5.3. Conclusion

In conclusion, the research on business continuity has underscored the critical importance of proactive planning and preparedness in ensuring organizational resilience in the face of disruptions. As businesses increasingly navigate a complex landscape marked by technological advancements, regulatory changes, and unexpected crises, the need for robust business continuity strategies has never been more paramount.

The findings indicate that organizations that prioritize comprehensive business continuity planning are better equipped to respond to and recover from various threats, including natural disasters, cyberattacks, and public health emergencies. Key elements such as risk assessment, employee training, effective communication, and the integration of technology play vital roles in enhancing the effectiveness of these plans.

Moreover, the research highlights the necessity for continuous evaluation and adaptation of business continuity strategies. Organizations must remain agile, regularly updating their plans to reflect new risks and changing operational environments. This adaptability not only strengthens resilience but also fosters a culture of preparedness among employees.

As we move forward, it is essential for organizations to embrace a holistic approach to business continuity that encompasses collaboration with stakeholders, industry-specific considerations, and the integration of innovative solutions. Future research should continue to explore these dimensions, providing actionable insights that can guide organizations in their journey toward sustainable resilience.

Ultimately, the commitment to effective business continuity planning is not merely a regulatory obligation but a strategic imperative that can safeguard an organization's reputation, operational integrity, and long-term success in an unpredictable world.

References

1. Abu-Jarad, I.Y., Yusof, N., & Nikbin, D. (2010). A review paper on organizational culture and organizational performance. *International Journal of Business and Social Science*, 1(3).
2. Al-Ali, W. (2019). The mediating effect of job happiness on the relationship between job satisfaction and employee performance and turnover intentions: A case study on the oil and gas industry in the United Arab Emirates. *Journal of Business and Retail Management Research*, 13(4), 1–15.
3. Mohamed, A., & Gamal, K. (2019). BCM and crisis leadership: An approach to re- engineer crisis performance within Abu Dhabi governmental entities, 10(1), 32-40.
4. Alosani, M.S., Yusoff, R., & Al-Dhaafri, H. (2019). The effect of innovation and strategic planning on enhancing organizational performance of Dubai Police. *Innovation & Management Review*, 17, 1, 2-24.
5. Al-Lamy, H.A., Bakry, M.H., Raad, W., Al-Shami, S.A., Alaraji, Z.J., Alsa-Lihi, M.W., ... & Al-Tameemi, H.M. (2018). Information technology infrastructure and small medium enterprises' in iraq. *Opcion*, 34(86), 1711–1724.
6. Al-Shami, S., Al-Hammadi, A.H., Hammadi, A., Al, Rashid, N., Al-Lamy, H., & Eissa, D. (2021). Online social networking websites in innovation capability and hotels' performance in Malaysia. *Journal of Hospitality and Tourism Technology*, 12(1), 72–84.
7. Amarakoon, U., Weerawardena, J., & Verreynne, M.L. (2018). Learning capabilities, human resource management innovation and competitive advantage. *The International Journal of Human Resource Management*, 29, 1736–1766
8. Attaran, M. (2003), Information technology and business-process redesign. *Business Process Management Journal*, 9(4), 440-458.
9. Aziz, N.N.A., & Samad, S. (2016). Innovation and competitive advantage: Moderating effects of firm age in foods manufacturing SMEs in Malaysia. *Procedia Economics and Finance*, 35, 256-266.
10. Zahari, B., Noor, Y., & Zulkifli, U. (2015). Business continuity management factors and organizational performance: A study on the moderating role of it capability. *Journal of Management Info*, 2, 5-12.
11. Belaouras, S. (2009). State of business continuity preparedness. *Disaster Recovery Journal*, 22(1). Retrieved from: http://www.drj.com/index.php?option=com_content&task=view&id=2206&Itemid=676
12. Cania, L. (2014). The impact of strategic human resource management on organizational performance. *Economia. Seria Management*, 17(2), 373-383.
13. Chow, W.S. (2000). Success factors for IS disaster recovery planning in Hong Kong. *Information Management and Computer Security*, 8(2), 80-87.
14. Chow, W.S., & Ha, W.O. (2009). Determinants of the critical success factor of disaster recovery planning for information systems. *Information Management and Computer Security*, 17(3), 248-275.
15. Conlon, R., & Smith, R.V. (2010). The role of the board and the CEO in ensuring business continuity. *Financial Executive*, 26(9), 52-55.
16. Copenhagen, J., & Lindstedt, D. (2010). From cacophony to symphony: How to focus the discipline of business continuity. *Journal of business continuity & emergency planning*, 4(2), 165-173.
17. Elliott, D., Swartz, E., & Herbane, B. (2010). *Business continuity management: A crisis management approach*, (1st Edition). Routledge, Abingdon, UK., ISBN:9780203866337, Pages: 352.
18. Elliott, D., Swartz, E., & Herbane, B. (2010). *Business continuity management: A crisis management approach* (2nd Edition). New York, USA: Routledge.
19. Krell, E. (2006). *Business continuity management*. The society of management accountants of Canada.
20. Foster, S.P., & Dye, U. (2005). Building continuity into strategy. *Journal of Corporate Real Estate*, 7(2).
21. Gallagher, M. (2003). *Business continuity management: How to protect your company from danger*. Prentice Hall.
22. Gerald, Q. (2004). *Survivability and business continuity management*. Data Mining and Web Intelligence, and Software Internationalisation, 32.

23. Gibb, F., & Buchanan, S. (2006). A framework for business continuity management. *International Journal of Information Management*, 26, 128-141.
24. Gibb, F., & Buchanan, S. (2006). A framework for business continuity management. *International Journal of Information Management*, 26(2), 128-141.
25. Hagerfors, A., Samuelsson, S., & Lindstrom, J. (2010). Business continuity planning methodology. *Disaster Prevention and Management*, 19(2), 243-255.
26. Haskett, J., & Rohde, R. (1990). Disaster recovery planning for academic computing centers. *Communications of the ACM*, 33(6), 652-657.
27. Herbane, B. (2010). The evolution of business continuity management: A review of practices and drivers. *Business History*, 52(6), 978-1002.
28. Herbane, B., Elliott, D., & Swartz, E. (2004). Business continuity management: Time for a strategic role? *Long Range Planning*, 37(5), 435-457.
29. Hoong, L.L. (2011). Factors influencing the success of the disaster recovery planning process: A conceptual paper. In: *Research and Innovation in Information Systems (ICRIIS)*, International Conference.
30. Irkey, T., & Tufekci, A. (2021). The importance of business continuity and knowledge management during the pandemic period. *Proceedings*, 74, 18
31. Jarvelainen, J. (2013). IT incidents and business impacts: Validating a framework for continuity management in information systems. *International Journal of Information Management*, 33, 764-774.
32. Piotr, J. (2013). Business continuity management: The perspective of management science. *International Journal of Contemporary Management*, 12(4), 85-9
33. Lindström, J. (2012). A model to explain a business contingency process". *Disaster Prevention and Management*, 21(2), 269-281.
34. Karim, A.J. (2011). Business disaster preparedness: An empirical study for measuring the factors of business continuity to face business disaster. *International Journal of Business and Social Science*, 2(18), 183-192.
35. Davor, L., Andrijana, P., & Julija, P. (2018). Evolving crisis management: Current jobs and required employee's skills and characteristics analysis. 6th International OFEL Conference on Governance, Management and Entrepreneurship. *New Business Models and Institutional Entrepreneurs: Leading Disruptive Change*. April 13th - 14th, 2018, Dubrovnik, Croatia, Governance Research and Development Centre (CIRU), Zagreb, 524-582
36. Laurent, W. (2007). Business continuity dashboards. *DM Review*, 17(6), 30-40.
37. Ali, L. (2019). Impact of leadership styles on organizational performance: A case study of public sector university, Bacha Khan. *Journal of Multidisciplinary Approaches in Science*, 4, Issue 1, University Charsadda.
38. Light, P.C. (2008). Predicting organizational crisis readiness: Perspectives and practices toward a pathway to preparedness. New York University: The Center for Catastrophe Preparedness and Response, Available at: http://www.nyu.edu/ccpr/pubs/OrgPreparedness_Report_NY_U_Light_8.18.08.pdf
39. Maier, A., Brad, S., Nicoar?, D., & Maier, D. (2014). Innovation by developing human resources, ensuring the competitiveness and success of the organization. *Procedia-Social and Behavioral Sciences*, 109, 645-648.
40. Mohamed Naser, A.N., Gamal, S.A., & Abuelhassan, A. (2019). Investigating the impact of leadership and business continuity management on organizational crisis performance. *International Business Management*, 13(7), 266-278, 2019
41. Mohamed, M.S. (2019). "The mediation effect of innovation on the relationship between creativity and organizational productivity: An empirical study within public sector organizations in the UAE". *Journal of Engineering and Applied Sciences*, 14(10), 3234-3242.
42. Mohammad, S., Masarat, A., Azizah, A.R., & Shamsul, S. (2008). Lessons learned in ITIL implementation failure. In *IEEE International Symposium on Information Technology ITsim2008*.
43. Ndabahaliye, S. (2013). An assessment on the impacts of employees ethical conducts to organization performance: A case of Dawasco. *Published Journal*, Open University of Tanzania.

44. Ning, W., & Wong, Z. (2009). The strategic skills of business continuity managers: Putting business continuity management into corporate long-term planning. *Journal of Business Continuity U Emergency Planning*, 4(1).
45. Husin, N., Abdullah, M., Ali, A.H. (2018). Business continuity planning in Malaysian universities. *International journal of management and applied science*, 4(6),28-32.
46. Payne, C.F. (1999). Contingency plan exercises. *Disaster Prevention and Management*, 8(2), 111-117.
47. Bryant, P. (2018). Business continuity management and resilience framework: [http://policies.griffith.edu.au/pdf/Business Continuity Management and Resilience Framework.pdf](http://policies.griffith.edu.au/pdf/Business%20Continuity%20Management%20and%20Resilience%20Framework.pdf).
48. Peterson, C.A. (2009). Business continuity management & guidelines. 2009 Information Security Curriculum Development Conference on - InfoSecCD '09, 114.
49. Peterson, C.A. (2009). Business continuity management & guidelines. In 2009 Information Security Curriculum Development Conference, 114-120.
50. Pitt, M., & Goyal, S. (2004). Business continuity planning as a facilities management tool. *Facilities*, 22(3/4), 87-99.
51. Punla, T., Santos, A., & Noleal, C. (n.d.). Business continuity plan. Asia Pacific College,doi:10.13140/RG.2.2.25552.71685
52. PWC. (2009). Business continuity management services overview. Available at: http://www.pwc.com/es_MX/mx/servicios-asesorianegocios/archivo/businesscontinuity1abr09.pdf
53. Randeree, K., & Al Youha, H. (2009). Strategic management of performance: An examination of public sector organizations in the United Arab Emirates. *International Journal of Knowledge, Culture and Change Management*, 9(4), 123-134
54. Kasim, R., Ashish, M., & Anjli, N. (2012). A business continuity management maturity model for the UAE banking sector. *Business Process Management Journal*, 18, 472-492.
55. Pierre, J., Yip, G.S., & Johnson, G. (2009). Measuring organizational performance: Towards Methodological Best Practice. *Journal of Management*, 35(3), 718-744.
56. Ruighaver, A.B., Ahmad, A., & Hadgkiss, J. (2012). Incident response teams–Challenges in supporting the organisational security function. *Computers & Security*, 31(5), 643-652.
57. Ruzic-Dimitrijevic, L., & Dakic, J. (2014). The risk management in higher education institutions. *Online Journal of Applied Knowledge Management*, 2(1), 137-152.
58. Sapriel C. (2010). Why do we keep making the same mistakes? *Communication World*, 27(4), 28-30.
59. Sawalha, I.H.S. (2013). Organizational performance and business continuity management: A theoretical perspective and a case study. *Journal of Business Continuity & Emergency Planning*, 6(4), 360–73. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/23835428>.
60. Ream, S. (2002a). How ?. The Business Continuity Management (BCM) maturity model.
61. Ream, S. (2002b). How mature is your business continuity program?
62. Rehman, S., Mohamed, R., & Ayoup, H. (2019).The mediating role of organizational capabilities between organizational performance and its determinants. *Journal of Global Entrepreneurship Research*, 9(30).
63. Shaw, G.L., & Harrauld, J.R. (2006). The core competencies required of executive level business crisis and continuity managers--The results". *Journal of Homeland Security and Emergency Management*. De Gruyter, 3, 1.
64. Tammineedi, R.L. (2010). Business continuity management: A standards-based approach, *information security journal: A global perspective*. Taylor & Francis, 19, 1, 36–50.
65. Wong, W.N.Z. (2009). The strategic skills of business continuity managers: Putting business continuity management into corporate long-term planning, *Journal of Business Continuity & Emergency Planning*. Henry Stewart Publications, 4(1), 62–68.
66. Wu, Y.C., Kweh, Q.L., Lu, W.M., & Azizan, N.A. (2016). The impacts of risk-management committee characteristics and prestige on efficiency. *Journal of the Operational Research Society*, 67(6), 813-829.
67. Yen, D.C., Chou, D.C., & Hawkins, S.M. (2000). Disaster recovery planning a strategy for data security. *Information Management and Computer Security*, 8, 222-230.

68. Abu Bakar, Z., Yaacob, N., & Udin, Z. (2015). The effect of business continuity management factors on organizational performance: A conceptual framework. *International Journal of Economics and Financial*, 5(Special Issue), 128-134.
69. Zehir, C., Yildiz, H., Kole, M., & Başar, D. (2016). Superior organizational performance through SHRM implications, mediating effect of management capability: An implementation on Islamic banking. *Procedia-Social and Behavioral Sciences*, 235, 807-816.
70. Zhang, X., & McMurray, A. (2013). Embedding business continuity and disaster recovery within risk management. *World Journal of Social Sciences*, 3(3), 61–70.