

# The Management of Business Continuity in SMEs Evidence from Egypt

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**Abstract** The concept of Business Continuity Management (BCM) has only recently emerged concerning small and medium-sized enterprises (SMEs) in Egypt, and few relevant studies have been conducted; therefore, the present study aims to generate a better understanding of current practices for adopting Business Continuity Management System by Egypt SMEs and to shed light on their requirements. **Design/methodology/approach:** The research will study the relationship between Organization Structure, Disaster Preparedness, Organization Resilience, and Business Continuity Management, using Formalization, Centralization, and Organization Size as a dimension for Organization Structure, and Supply Chain Management, Cash Flow Management, and Knowledge Management as a dimension for Organization Resilience. Using the quantitative method, Data were collected from 323 respondents working in Egypt SMEs using an online questionnaire. **Research results:** The results showed a direct positive effect of Organization Structure on Disaster Preparedness, with a significant positive correlation between Formalization and Organization Size with Disaster Preparedness; however, Centralization was non-significant. There was a non-significant relationship between Organization Structure and its dimension of Centralization and Business Continuity Management System; however, there was a significant correlation between Formalization, Organization Size, and Business Continuity Management System. Disaster Preparedness showed a significant direct positive effect on Business Continuity Management System. The indirect relationship between the Organization Structure and Business Continuity Management System through the mediator effect of Disaster Preparedness showed a significant direct positive effect with full mediation. The indirect relationship between the Organization's Resilience and Business Continuity Management System through the mediator effect of Disaster Preparedness; the results showed a positive effect on Business Continuity Management System, with a significant positive correlation between Supply Chain Resilience, Cash Flow Resilience, Knowledge Management Resilience, and Business Continuity Management System. The relationship between the Organization's Resilience and Disaster Preparedness, The results showed a significant effect on Disaster Preparedness, with a significant correlation between Supply Chain Resilience, Cash Flow Resilience, Knowledge Resilience, and Disaster Preparedness. The relationship between Organization Structure and Disaster Preparedness through the moderation effect of Organization Resilience showed a non-significant effect of Organization Resilience on the relationship. **The significance of results, recommendations, and possible applications:** The study has proposed a new framework for a Business Continuity Management System; to be applied in SMEs; the study revealed that Managers of SMEs shall maintain a state of Formalization inside the firm, even in a start-up phase, in addition to maintaining a highly resilient organization by focusing on best practices for Supply Chain Management, Cash Flow Management, and Knowledge Management inside the firm in order to reach a high state of Disaster Preparedness inside the firm to deal with disruptions and changing circumstances in the business environment. It is recommended to build on the current study framework and expand it by adding more dimensions for Organization Structure like complexity and span of control, test the effect of new constructs, for example, organization innovation or external environment; further, the research did not distinguish between industries; accordingly, it is favorably to issue this study according to each industry and observe the variation in results.

**Keywords:** *Small and Medium-Sized Enterprises (SMEs), Business Continuity, Disaster Preparedness, Organizational Resilience, Supply Chain Management, Cash Flow Management, Knowledge Management Organizational Characteristics, Centralized Decision-Making, Formalization, Business Continuity Management (BCM)*

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### 1. Introduction

Small and Medium-Sized Enterprises (SMEs) in national economies have become indispensable for job creation; they are crucial to achieving economic growth and eliminating unemployment; Small and medium-sized businesses can stand out based on employee count and annual revenue [1].

In 2020, according to the Central Agency for Public Mobilization and Statistics (CAPMAS), in Egypt, between 3 and 8 million micro-enterprises and 67,000 small businesses were operating with \$4.9 billion in capital [1].

In Egypt, the Central Bank of Egypt (CBE) classifies small businesses as having a business volume between EGP 1 million and EGP 50 million and medium-sized companies as having a volume between EGP 50 million and EGP 200 million [2].

However, there are barriers to SME establishment in Egypt; Zamzam (2017) used semi-structured interviews with sixteen entrepreneurs to identify obstacles facing entrepreneurs in establishing their SMEs in Egypt; They identified the following challenges: a lack of financing options, complicated legal documents, lengthy legal procedures, inconsistencies in laws, corruption, inadequate infrastructure, a lack of qualified workers, a lack of business information regarding the market and competitors, unfair market competition, and the prevention of new market entries, Further, it has been suggested that real-world experience is crucial in enhancing business skills [3].

Not to mention the Covid-19 crisis, which added more burden on SMEs' performance, the entrepreneurs who embraced a flexible culture and prioritized new investments in innovation were able to survive the COVID-19 pandemic and remain competitive in the market [4].

According to the Global Entrepreneur Monitor report (2017) on the Middle East, business discontinuance rates are defined as the percentage of the adult population who decided to discontinue one or more entrepreneurial activities in which they were involved for any reason; Regionally, the MENA region has a high rate of business discontinuance not to mention Egypt which has the most business discontinuity rates as illustrated below:

Country	Opportunity to sell	Unprofitable	Problem getting finance	Another job/opportunity	Exit planned	Retirement	Personal reason	Incident	Bureaucracy
Egypt	0.3*	47.7	11.7	7.6	1.3	0.9	20.5	2.4	6.7
Iran	2.4	44.6	12.4	6.1	2.4	1.2	20.6	2.3	2.2
Jordan	3.4	55.4	16.1	8.2	1.7	0.0	7.8	0.0	7.2
Lebanon	2.5	43.7	6.4	11.1	3.5	2.1	18.6	10.3	1.8
Morocco	0.0	51.7	19.0	1.4	0.0	0.0	21.3	0.0	6.6
Qatar	8.6	28.6	16.3	11.4	1.1	3.0	26.2	1.8	3.0
Saudi Arabia	24.7	25.5	18.2	11.5	7.9	6.1	6.0	0.0	0.0
Tunisia	2.3	24.2	25.6	13.3	0.0	1.5	27.1	2.9	2.3
UAE	28.7	39.9	8.4	10.6	1.0	4.6	6.9	0.0	0.0
AVERAGE	8.1	40.1	14.9	9.0	2.1	2.2	17.2	2.2	3.3

Figure 1. Reason for business exit in MENA countries Source [5]

Also, the report included the reasons for the business discontinuity in the MENA region, as illustrated below:

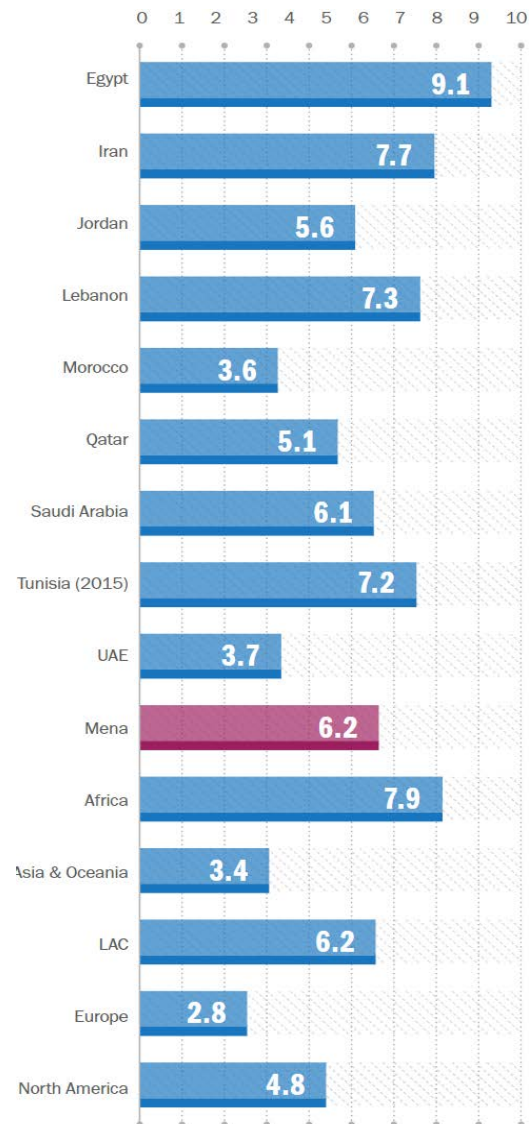


Figure 2. Business discontinuation rate (% of adult population) source [5]

The report shows that Egypt's unprofitable business is the main reason for the business discontinuity; in addition, it is the third highest percentage in the whole MENA region behind Jordan and Morocco [5].

According to Sambo (2012), SMEs face various recurring and multifaceted challenges, including natural disasters, political turmoil, economic crisis, market access challenges, institutional failures, and infrastructural barriers; therefore, a disaster is not limited to natural catastrophic events such as tsunamis but also includes any event that can significantly impact the operation of an organization, such as a human error in data entry or deliberate acts; a crisis or disaster could be any sudden emergency that disrupts the day-to-day operations of an organization or community and has the potential to harm a company's competitive position, necessitating immediate action [6].

According to Corrales-Estrada (2021), the successful use of Business Continuity Management (BCM) can help SME businesses that want to protect themselves during a crisis, such as Covid-19; the research done by those

authors identified that most companies failed to understand the risks that occurred during the pandemic indeed has to lead to their failure [7].

Further, the ability of small business owners to improve their recovery performance in terms of time and quality is contingent upon their pre-Disaster Preparedness, Resilience, and recovery capacity [8]. Not to mention, SMEs may differ in their organizational Structure, e.g. (degree of Centralization, Formality, Size, a span of control); the organization's internal structure is positively associated with adopting Business Continuity management [9].

As supported by Jesmin (2012), the effectiveness of an organization is contingent upon a fit or match between the technology used, the environment's volatility, the organization's size, the organizational Structure, and its information system [10].

Besides, the Organizational Structure strongly correlates with Disaster Preparedness (Amirkhani & Saremi, 2016).

According to Bhamra (2011), An organization's adaptive capacity aids in better Preparedness for turbulent environments; thus, Resilience strategies result in a constant state of Preparedness and readiness to respond to unforeseen events [12].

Based on the above, research on the resilience of small and medium-sized enterprises (SMEs) in this turbulent environment is more desirable because it advances our theoretical and practical understanding of the concept in the SME field [13].

The researcher will study the variables that may affect the adoption of the Business Continuity Management System, starting from Organization Structure [9] with the mediating effect of Organization Disaster Preparedness [9], [14] while studying the moderating effect of Organization Resilience on the relation between Organization Structure and Disaster Preparedness in Egypt SMEs.

## 2. Problem Definition

Today's organizations are highly dependent on all their stakeholders; as a result, they face a variety of disasters, ranging from simple power outages to fluctuations in national economies; The year 2020 brought with it a factor that disrupts the continuity of business: This epidemic, As a result of the restrictions and prohibitions imposed due to the rapid spread of COVID-19, production, and service processes were negatively impacted; as recommended by authorities, the business community has adopted a remote working model; During this period of rapid development, companies that were not at the level of Disaster Preparedness have suffered business and financial losses, demonstrating the significance of Business Continuity and Knowledge Management [15]. Even before fully recovering from the effects of Covid-19, Russia's invasion of Ukraine in February 2022 heightened geopolitical tensions between the West and Russia, lowering global growth expectations due to uncertainty about the conflict's effects, particularly on the global Supply Chain; furthermore, Western sanctions against Russia had a ripple effect on the global economy, Conflicts have caused energy supply shocks, commodity, and trade supply shocks, and rising energy, food, and commodity prices, resulting in global inflation in many countries [16].

Supported by one of the international studies on the impact of Covid-19, A US-based survey of 5,800 SMEs found that most SMEs experienced high financial fragility, up to 45% shutdowns, and a reduction in overall employee numbers [17].

Similarly, AvidXchange polled 500 senior leaders in the United States to determine their level of Disaster Preparedness; the study revealed that slightly more than 60 percent of businesses have a continuity plan, but only 37 percent have the necessary technology to enable employees to work remotely as part of their strategy; More than forty percent of businesses would make at least some late payments if finance staff had to work remotely, and twelve percent believe that all charges would be late if finance staff was required to work remotely; Comparatively, only one in five businesses would be able to continue normal operations for more than a few weeks if their cash flow was interrupted by late payments [18].

Thus, Business Continuity is still a poorly understood concept in small businesses; many associates it with emergency response or disaster recovery via information technology; there are numerous barriers to SMEs implementing BCM; they include an insufficient understanding of the critical nature of Business Continuity; many SMEs view BCM as being beyond their planning capacity, underestimate the impact of BCM and the likelihood that the business will survive financially during a period of disruption, some SMEs believe they can manage disruptions when they occur, there is no need for preplanning, BCP is not prioritized, it is prohibitively expensive to implement, there is a dearth of experience sharing among BCM professionals outside large corporations, the process is excessively complicated, there is no provision for a step-by-step process [19].

Accordingly, and due to the global impact of the pandemic, there is an exceptional opportunity to learn more about the benefits of Business Continuity Management and how BCM programs can be modified to ensure more effectiveness [20].

Kim (2018) examined the relationship between Organizational Structure and Business Continuity adoption in Malaysia; the researcher utilized the dimensions of Formalization, Centralization, and Size in the Organizational Structure; without distinguishing according to industry and without studying the organization's Resilience level [9].

In addition, Kato (2018) examined the relationship between Business Continuity Adoption and Disaster Preparedness in Thailand; besides the relationship between Disaster Experience, Organization Knowledge, and Size with Disaster Preparedness, however, the researcher did not study other Organizational Structure dimensions like Centralization and Formalization as in Kim (2018) research; in addition to crucial Resilient dimensions like Cash Flow and Supply Chain Management [21].

Other researchers selected one or two variables to study in connection with Business Continuity, like Disaster Preparedness and Business Continuity [14] and Knowledge Management and Business Continuity [15].

The topic of Business Continuity Management has just recently evolved in Egypt; only a few relevant studies have been done before to study its relations [22].



To the researcher's knowledge, no similar research has been done to determine the influence of Organizations' Structure on Business Continuity, the level of Disaster Preparedness of SMEs in Egypt, and how the Organization's Resilience moderates these relations.

### 3. Research Purpose

In recent years, the theory of Business Continuity Management (BCM) has been developed and, according to researchers, is the key to the survival of any organization facing a crisis management situation [23].

The current research aims to generate a better understanding of the current practices of BCMS by SMEs in Egypt by developing a proposed novel model examining the main factors leading to adopting a Business Continuity Management System through Studying the Organization's Structure, including the dimensions of Formalization, Centralization and Organization's Size, and its relation with the level of an organization's Disaster Preparedness [11], besides Organization's Structure relationship with the Business Continuity [9], the research will also study the relationship between organization Disaster Preparedness and Business Continuity [14], the relationship between Organization Resilience and Disaster Preparedness and with the moderating effect of Organizational Resilience between Organizations Structure and Disaster Preparedness, using the enablers of Organization Resilience like Supply Chain Management, Cash flow management, and Knowledge Management [24], all as an antecedent to the success of adoption of a Business Continuity Management System, the research model for this study is illustrated below:

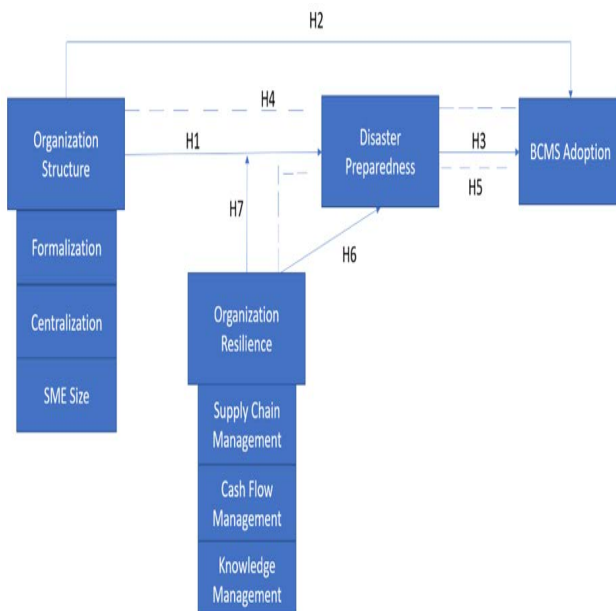


Figure 3. Research Framework

### 4. Research Gap

According to research, little is done on SMEs and concepts such as crisis management, Business Continuity Management, and disaster recovery [25,26].

Business Continuity Management has recently evolved in Egypt; only a few relevant studies have been done before to study its relations [22].

Worldwide minimal research has been done to study the relationship between Organization Structure and Organization Preparedness, whereby most of them are concerned with natural Disaster Preparedness [27]; in addition, most research done worldwide in the field of Business Continuity concentrates on natural Disaster Preparedness and mitigation [28,29].

An organization's adaptive capacity aids in better Disaster Preparedness for turbulent environments; thus, Resilience strategies result in a constant state of Disaster Preparedness and readiness to respond to unforeseen events [12].

However, Organization Resilience does not have a universally accepted framework; different organizations employ a variety of frameworks [30].

Based on the above, research on the Resilience of small and medium-sized enterprises (SMEs) in this turbulent environment is more desirable because it advances our theoretical and practical understanding of the concept in the SME field [13].

Based on this, there is a clear need to investigate further the main determinant factors leading to adopting the Business Continuity Management System among SMEs in Egypt.

### 5. Research Questions

1. What is the relationship between Organization Structure and Disaster Preparedness?
2. What is the relationship between Organization Structure and Business Continuity Management System?
3. What is the relationship between Disaster Preparedness and Business Continuity Management System?
4. To what extent does Disaster Preparedness mediate the relationship between Organization Structure and Business Continuity Management?
5. To what extent does Disaster Preparedness mediate the relationship between Organization Resilience and Business Continuity Management?
6. What is the relationship between Organization Resilience and Disaster Preparedness?
7. To what extent is Organization Resilience moderate the relationship between Organization Structure and Disaster Preparedness?

### 6. Literature Review

Business Continuity Management is a holistic management process that identifies potential threats to an organization and provides a framework for organizational Resilience by equipping it with the capability of an effective response [31,32,33].

A Business Continuity Management System or BCMS is an essential tool or system that SME companies can use while establishing their objectives; the main components that were identified and will be beneficial for future study

include developing policies, planning, implementing, performance assessment, management review, and continual improvement. Also, according to the guidance provided by ISO, it was also recognized that competent management is the most crucial factor in the development and continuous re-examination of BCMS [34].

One thing is for sure Covid-19 is not the first pandemic and, sadly, will not be the last, which is why SMEs must identify the inherent risks; BCMS can help such businesses to decrease the loss of temporary closure of operations [35].

Nevertheless, Dushie (2014) highlighted that 40% of small businesses did not have enough resources to reopen after a disaster or pandemic; according to Hawas (2021), Less than 30% of SME businesses have disaster plans, and more than 70 percent do not have any strategies for Business Continuity; nevertheless, studies did reveal that a real-world pandemic or disaster leads to an increase in awareness and makes the businesses compelled to develop a disaster plan [35,36].

Furthermore, a lack of clarity was also identified through the literature review regarding the policies needed during disasters, and There is a dense and opaque political treatment regarding pandemics and a lack of guidance; such lack of clarity and guidance has led to SMEs fighting to survive during pandemics, There are plenty of sociocultural concerns that are being unaddressed by many countries, including Egypt since they prefer to focus on an engineered response [4,37].

Kato & Charoenrat (2018), in their research in Thailand, investigated the state of BCM practice among SMEs; the study concluded that there is a low Disaster Preparedness level and failure in developing a Business Continuity Plan (BCP) among Thailand SMEs and the more significant the disaster experience of SMEs, the greater their Disaster Preparedness, including a written BCP, Business Continuity knowledge, and awareness of training requirements [21].

Kim Lee & Amran Azlan (2018) examined the factors that influence the adoption of Business Continuity Management (BCM) in Malaysia, and The researchers concluded that Adopting BCM is correlated with relative advantages, compatibility, Organization Size, and government regulation; In contrast, it appeared that Complexity, Formalization, and Centralization have a negative effect on adoption [9].

Ameri (2021) selected management support, external requirements, organization preparedness, and embeddedness of continuity practices to measure BCM in public organizations, and The result demonstrated that BCM factors (management support, external requirements, organization preparedness, and risk management) substantially impact the performance of public organizations in the UAE [23].

Business Disaster Preparedness, frequently referred to as Business Continuity, encompasses a variety of factors such as strategic management, business risk analysis, Business Continuity planning resources, Business Continuity planning documentation, and information life cycle management [38].

Disaster Preparedness is a critical component of disaster risk reduction that, when appropriately implemented, can significantly reduce the time required for small business owners to recover [39].

Mwaiwa and Odiyo (2015) carried out a case study on Equitol Bank in Kenya year 2015; the focus of the study was on the significance of Disaster Preparedness in corporate organizations to guarantee Business Continuity; Despite the limitation of the study to only one case study, it found that a company's Business Continuity Management is enhanced by the existence of a comprehensive Disaster Preparedness plan; this means that businesses must be sufficiently prepared for unforeseen events that could jeopardize their operations and long-term survival prospects [14].

Further, Amirkhani (2016), with other researchers, investigated the relationship between Organizational Structure and crisis communication preparedness in Iran; they concluded that there is a strong correlation between organizational Structure dimensions (such as Formalization, Complexity, and process orientation) and Organizational Structural content (such as technology, strategy, Organizational Size, and organizational culture) and Disaster Preparedness; however, there was an inverse relationship between organizational concentration and Preparedness for crisis communications [11].

In addition, Dushie (2014) investigated factors that hinder businesses' effective Disaster Preparedness from within Africa and concluded that Disaster Preparedness is linked with Business Continuity planning and is influenced by four critical factors: a perceived high cost, a lack of staff, insufficient information, and a low priority; while apathy had a minor effect on effective Disaster Preparedness [35].

A Disaster Preparedness strategy could help reduce the number of days that small business employees are out of work [29].

Sadiq & Graham (2016) concluded that Organizations that have been affected by disasters are more likely to adopt Disaster Preparedness activities than organizations that have not been affected by disasters; In addition, Organization Size (facility-level) is a reliable predictor of Preparedness at the organizational level, as larger organizations are more Formalized in risk management initiatives and typically have the resources to invest in Disaster Preparedness measures [28].

Supported by Kato's research in 2018, Perceived Disaster Preparedness, Business Continuity knowledge, and training requirements are positively correlated with business Size, duration of operation, and disaster experience [21].

Small business owners' ability to improve their recovery performance in terms of time and quality is contingent upon their pre-Disaster Preparedness, Resilience, and recovery capacity [8].

It is also identified that businesses have a knowledge gap regarding resilience; to be a Resilient and efficient organization, the leaders need to have strategies regarding responses to external threats, employee strengths, organizational reliability, design principles that can decrease Supply Chain disruption, and the adaptability of business models, Studies have also suggested that there is more than one meaning of Resilience which is why companies prefer to develop their theories or understanding of Resilience; there is a lack of insights regarding empirics of noticing Resilience to future danger [40].

According to researchers, There are two types of Resilience, passive Resilience, defined as "the capacity to bounce back without breaking," and active Resilience, described as "a deliberate effort to improve one's ability to cope with future adversity" [30,41].

Also, researchers argue that Resilience can be significantly enhanced through developing and maintaining Resilient culture [30].

A SMEs study by Pal (2014) on Swedish textile and clothing also identified several critical enablers of Resilience, categorizing them as resourcefulness (material resources, financial resources, social resources, network resources, and intangible resources), competitiveness (resource flexibility, redundancy, robustness, and networking), and learning and culture (leadership and top-management rapid decision-making, collectiveness and sense-making, and employee well-being) [24].

SMEs seem to have a meager survival rate during a significant crisis, meaning that such companies have to tackle many more threats than giant enterprises, a lack of Resilience could be seen in much research that was linked with SMEs [42].

Thus, still little is known about how organizations, particularly SMEs, can attain Resilience [12].

Moreover, researchers from China year 2021 concluded that organizational resources could reduce vulnerability and increase resistance to the effects of crises; Consequently, learning Resilience and capital Resilience are essential elements of organizational Resilience [43].

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The importance of organizational Resilience is linked with the Supply Chain, SMEs seem to be hitting the hardest during a pandemic as massive as Covid-19, and the main reason behind the company's failure is the lack of Resilience, planning, and preparation is crucial; so that the businesses' Supply Chain is not affected [44].

It was discovered from Data collected from 264 UK manufacturing plants that the factors associated with the industry value chain, such as geographic dispersion, scale, and delivery complexity, moderate the relationship between a firm's Supply Chain resources and capabilities and its Resilience [45].

Supported by Ouabouch research (2015), another research conducted on Bangladeshi apparel manufacturing companies concluded that Supply Chain readiness, Supply Chain flexibility, and Disaster Preparedness are of the utmost significance; Supply Chains should have preparedness and response-recovery capabilities to reduce vulnerability; Supply Chain practitioners should convince top management of the critical importance of pre-disruption approaches in terms of Supply Chain readiness, flexibility, reserve redundancy, visibility, collaboration, and Disaster Preparedness, as well as post-disruption aspects of response and recovery ability and the researcher recommended a longitudinal focus in future research [46].

The above research was also supported by Hendry's researcher, who recommended that firms reconfigure their operations and Supply Chains to become more resilient to the threats, which shall be considered [47].

Not to mention, the firm's resources and assets, including financial, social, material, and network, need to be utilized effectively to develop a Resilient Organizational Structure, as a Resilient SME seems to possess relational, financial resources, networks, and strategic and operational flexibility [44].

In the United States, millions of small businesses fail each year; according to research, over 286,000 of the estimated 2,481,000 small businesses fail yearly due to financial illiteracy [48].

Peterson (2009) argued that one of the reasons many organizations fail to implement effective BCM is a lack of financial support, as much senior management and the board of directors exercise extreme fiscal prudence; this could be because the BCM implementation provides no direct financial benefit or return on investment [49].

Wadesango (2019) researcher in Zimbabwe concluded that few owners of small and medium-sized enterprises (SMEs) with Knowledge of Cash Flow Management and have sufficient funds to ensure the future survival of their businesses; The majority of cash management practices employed by SMEs significantly negatively impact their profitability and viability; They are unwilling to implement Cash Management practices, resulting in their failure [50].

Kosmala (2022), in the research to explore the tourism industry's cash-driven Resilience capabilities for tourism businesses operating in four Central European countries, the study confirmed that the cash-driven return on capital (RC) of tourism businesses is unrelated to company size; it suggests that policy interventions should be designed to support all businesses equally, regardless of size, The researcher demonstrated how available financial slack (and cash resources) could be used to estimate Resilience capabilities not only in the context of Disaster Preparedness but also in the context of the capacity to absorb and recover from the harmful effects of pandemic risk; however, the study was a one-dimensional analysis (cash-driven Resilience) it did not have controls for a broader range of organizational Resilience factors [51].

According to Zaiid (2012), There is a correlation between Knowledge Management and performance improvement measures; the use of high-quality organizational Knowledge in decision-making is possible; it can be concluded that when an Organization's Knowledge is of high quality, its performance improves significantly [52].

Thus, The creation and transfer of Knowledge within an organization have become a critical component of the organization's success and competitiveness [53].

Umoh & Amah (2013) examined the relationship between Knowledge Management and organizational Resilience; from thirty-four manufacturing companies in Nigeria; they concluded that few businesses have succeeded in developing a knowledge-based capability for gaining and establishing Resilience, further Incorporating knowledge storage, knowledge sharing, and knowledge application into the daily activities ensures organization Resilience and enhance organization adaptation,

resourcefulness, and organizational learning, they recommended that organizations continue to strengthen their Knowledge Management practices, particularly in the areas of knowledge acquisition, knowledge storage, knowledge sharing, and knowledge utilization in daily operations, as this will ensure their Resilience [54].

In addition, Meflinda (2018) researched to analyze the impact of social capital and Knowledge sharing on the sustainability strategy and performance of SMEs; the study was on 56 SMEs located near Malaysia and Singapore; the researcher concluded that social capital and knowledge sharing have a significant impact on the sustainability strategy of SMEs; moreover, sustainability strategy and knowledge sharing have a considerable effect on SME performance, in addition to there was a significant effect on Business Continuity strategy on performance of SMEs [53].

Irkey (2021) studied the influence of Knowledge Management on Business Continuity and crisis management in one IT service company in Turkey; the researchers concluded that the centrality, flexibility, and ability to collaborate with faster, simpler, and remote access that comes with Knowledge Management not only prevented the company from being negatively affected by the situation but also contributed to the creation of competitive advantage by enabling new service designs and enhancing overall service performance, this demonstrates the significance of an integrated Knowledge Management Business Continuity approach [15].

To detect weak signals of impending crises in the internal and external environment, SMEs can employ a variety of anticipation strategies, each of which is characterized by an increasing level of organizational commitment; Organizational commitment is defined as the product of the frequency with which a company conducts anticipation activities and the level of Formalization with which those activities are completed, as frequency and Formalization are inextricably linked when it comes to activities devoted to scanning the environment in search of potential crises [55].

Thus, according to researchers, Formalization facilitates exploration and exploitation activities, but this also depends on the organization's level of Formalization [56].

Formalization and Centralization are all influential content variables in Organization Structure [57].

Organizational Structure is defined as the dimensions of an organization that determines how tasks are divided, who does what and how, and acts as the connective fiber that regulates member behavior [58].

According to Katsikea (2011), various firms use the Organizational Structure as a control mechanism to influence employees' work outcomes in order to ensure that required tasks are completed effectively and efficiently, as well as to aid in the achievement of organizational goals and objectives [57].

Pope (2019), in a study on higher education institutes in the United States, investigated whether colleges and universities successfully adapted their internal Organizational Structure to external threats would perform emergency Preparedness tasks more effectively; the researcher concluded that those with a higher level of hierarchy do not perform as well as those with a lower level of hierarchy in terms of natural Disaster

Preparedness; institutions that provide emergency managers with budget flexibility perform better in terms of natural Disaster Preparedness than those that do not; institutions with decentralized decision-making perform better in terms of Preparedness for natural disasters than those with more centralized decision-making [27].

Tagod (2021) examined the impact of coercion on the relationship between Organizational Structure and construction risk management in the Malaysian construction industry; the results indicated that an effective Organizational Structure motivates organizational members to achieve a common objective regarding construction project risk, the top-level management should choose an appropriate Organizational Structure that will enhance the quality of the work and permit workers to do so; moreover, construction organizations that adopt Formalization and Centralization Structure while ingesting coercive pressure will record fewer instances of risk on projects [59].

Spatig (2013) research in the USA aimed at understanding the relationships between Formality, Organization Structure, and performance in small firms operating in the insurance and financial industry and concluded a significant positive correlation between age, the number of employees, and firm performance; positive performance is significantly related to proactive hiring before growth to drive growth, as opposed to hiring in response to change or waiting for a crisis to hire employees, Organizational design based on specialized roles and work delegation has a significant positive correlation with firm performance; Formality, in the form of written documentation, was ineffective in describing performance; in contrast, firm Size has a highly significant relationship with both Formalization and innovation [60].

Anturi (2020) examined the impact of specific organizational factors (i.e., enabling Formalization, coercive Formalization, and trust) within the organic agro-food sector of Spain, And concluded that enabling Formalization and organizational trust is positively associated with ambidexterity; as for trust as a moderating variable for Formalization and ambidexterity, the results were varying, Besides, the researcher claimed that Enabling Formalization promotes not only a balance between exploitation and exploration within the organization but also their synergistic combination; surprisingly, the researcher did not observe a negative effect of coercive Formalizations on ambidexterity, And also, managers can leverage Organizational Structure to conduct exploration and exploitation activities concurrently and to create synergies between them; the more formalized an organization's Structure is (not coercively but enabling), the more ambidextrous it can be; EF can help identify new exploration and exploitation opportunities; it allows effective resolution of inevitable contingencies, and it encourages employees to engage in interactive dialogues that promote viewing problems as opportunities and learning from past mistakes; This ensures job security and increased participation through improved coordination, thereby promoting ambidexterity, and to enrich the research, future studies could investigate the effects of other organizational characteristics (e.g., Centralization) or the consequences of ambidexterity (e.g., business performance) [61].



There is also a possibility that different types of SMEs that work in different industries might not exhibit similar risk-taking behavior; there should not be rigidity in the way a company handles a pandemic because the tasks, structures, and contexts will always be different in different scenarios. It was also identified that there is a lack of collaboration or centralized organization [62].

Alesch, Holly, Mittler, and Nagy's research could not find statistical evidence that standard precautions, such as structure protection, ensure business survival. Second, they discovered that only the weakest businesses fail immediately after a disaster; third, the majority of the owners who participated in their research had ideas for how to adjust to their new situation. This indicated that SMEs could become more Resilient, even though they lack the resources that large enterprises do. Sullivan-Taylor and Branicki studied the impact of the sector, geographic location, and industry on organizational Resilience. They discovered that small firms have an advantage over larger firms because they typically have less bureaucracy, the ability to make quick decisions and communicate quickly, and shorter processes [26,63].

According to organizational contingency theory, Firm Size is the most important predictor of formality and Structure, making informality and lack of Structure the rule for small businesses; Additionally, contingency theory postulates that a stable environment predicts the development of formality and Structure to capitalize on efficiency gains, typically in larger firms [60].

Also, Employee count positively correlates with Organization Formalization and firm performance in micro businesses [60].

Amirkhani's and Sadiq's research; The researchers discovered a significant positive correlation between the size of an organization, its crisis experience, and the Organization's Disaster Preparedness; due to their greater financial resources, larger companies can more easily invest in new and more advanced technology; additionally, larger organizations have greater access to specialists in a variety of domains; The accumulation of these factors has resulted in larger organizations being more prepared to respond to disasters [11,28].

They were supported by Kato's (2018) research, where they mentioned that Small and medium-sized businesses are characterized by a lack of Preparedness for Business Continuity in the event of disruptive events, as evidenced by the absence of a disaster risk management plan or Business Continuity plan [21].

Further, Pope (2019), In his research to study the relationship between Organizational Size, regional location, organizational type, and sustainability, concluded that there was a strong correlation between Organizational Size and clearly defined management practices, which would eventually result in a higher percentage of organizations reporting on sustainability [27].

Sadiq and Graham (2016) demonstrated the close relationship between Organization Size and organization Preparedness, noting how Organizational Size determined the level of organizational Preparedness. The research by Sadiq and Graham focused on the U.S. The study's results established that the Organization Size involving

employees and their characteristics, such as age, and perception of previous disaster experience, were helpful to combat disasters; also, training or communicating with employees about disaster reduction and evacuation plans increases organizational Preparedness [28].

There are immense benefits for companies to Centralize themselves rather than emphasize conventional processes because collaboration with different stakeholders can improve decision-making; inclusion is essential, especially during pandemics, because it will help in creating and developing a community of interacting stakeholders that successfully engage in an ongoing stream of problems during the strategy process [64].

Anabtawi (2017), in a study, examined the relationship between Organizational Centralization, organizational climate, Knowledge Management, and perceptions of Supply Chain integration and product launch success in the automotive industry in the USA. The results indicated that no significant correlation was found between the perception of organization Centralization and the success of a product launch, in addition to the finding also supported that when an organization's Structure is more integrated, decentralized, and informal, social interaction becomes incredibly advantageous for Knowledge Management, creativity, and product development. To conclude, Centralization with a positive and a negative side. On the positive side, the process entitles top managers to an extensive view of operation; hence they can exercise tight control. The process is also associated with cost reduction by eliminating redundancy in operations. However, Centralization has detrimental effects on an organization's continuity since it denies the lower-level workers the swiftness to respond to problems or customer demands. Still, the process denies workers the chance to develop their leadership and decision-making skills; thus, organizational Centralization can significantly influence the continuity of a business [65].

Supported by Lampel (2014), Firm Resilience was high in enterprises with a high level of employee participation, despite chaotic situations [66].

Gentile-Lüdecke (2019) investigated how traditional Organizational Structure variables—Formalization, specialization, and Centralization—influence the adoption of inbound and outbound open innovation in Chinese SMEs located in Zhejiang and Shanghai and concluded that Formalization hurts outbound innovation; a high degree of Formalization is an impediment but is positively associated with inbound innovation, and a positive association between Centralization and outbound innovation. Open discussions reduce organizational formalities, especially in small businesses, leading to decentralization as employees can participate in planning and decision-making. Formalization strengthens employee discipline, as they understand the rules, protocol, and penalties of disobedience; all these variables lead to better Business Continuity [67].

It is believed that Centralization contributes to effective disaster governance by building local capacity and incorporating local perspectives and Knowledge through the participation of local actors; decentralization is supposed to facilitate disaster management activities, as disasters and disaster risks manifest locally [68].



### 7. Research Hypothesis

- H1: There is a Correlation between Organization Structure and Disaster Preparedness.
- H2: There is a Correlation between Organization Structure and BCMS Adoption.
- H3: There is a Correlation between Disaster Preparedness and BCMS Adoption.
- H4: Disaster Preparedness mediates the relation between Organization Structure and BCMS.
- H5: Disaster Preparedness mediates the relationship between Organization Resilience and BCMS.
- H6: There is a correlation Between Organization Resilience and Disaster Preparedness.
- H7: Organization Resilience moderates the relationship between Organization Structure and Disaster Preparedness.

### 8. Results

#### 8.1. Respondents' Demographics

There was a total of 323 qualified respondents working in Egypt SMEs; the demographic characteristics of respondents are reported in Figure 5, about 93% of the respondents were in service firms, 9% were retailers, 6% were in manufacturing, and 2% were whole sales and R&D firms; furthermore, 32% of the firms were in business between 3 and 6 years, 20% were between 7 and 10 years, 17% were between 10 and 15 years, 16% for more than 15 years, and 15% for less than three years, Regarding the job position in the firm, 44% of the respondents were managers, 29% were employees, 22% were owners, about 5% were supervisors, for the respondent location about 49% were from Cairo city, 10% from Alexandria city and about 7.5% from Dakahlia Governate as detailed in Figure 4.

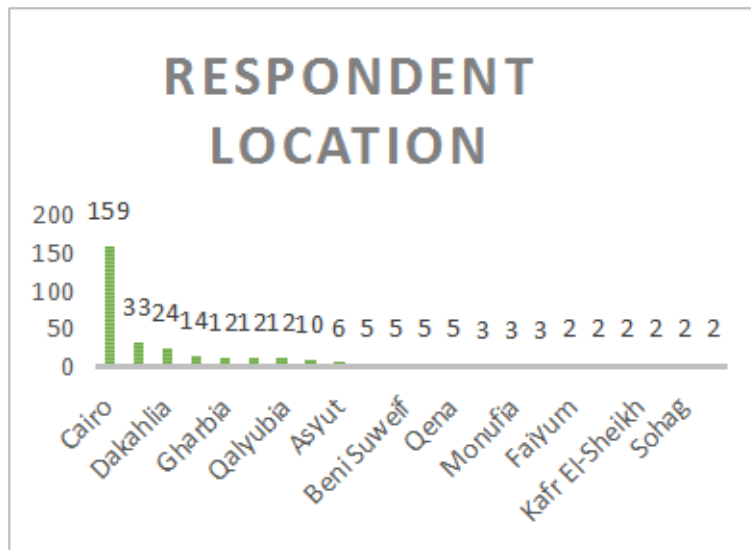


Figure 4. Respondent Location

Variable	Category	Count	%
What is the type of your firm?	Manufacture	19	5.9%
	Service	267	82.7%
	R & D	2	0.6%
	wholesales	5	1.5%
	Retailer	30	9.3%
How many years has your firm been in business?	Less than three years	49	15.2%
	3 -6 years	103	31.9%
	7- 10 years	66	20.4%
	10-15 years	55	17.0%
	more than 15 years	50	15.5%
Your job position in the firm?	Employee	94	29.1%
	Supervisor	15	4.6%
	Manager	142	44.0%
	Consultant	0	0.0%
	Owner	72	22.3%

Figure 5. Demographic Characteristics

Table 1. Normality Diagnostics

Construct	Symbol	Skewness	Kurtosis
Formalization	FORM	-0.42	-0.315
Centralization	CEN	0.163	-0.529
Size	Size	-0.137	-0.683
Disaster Preparedness	DP	-0.87	1.443
Business Continuity Management	BCM	-1.105	2.479
Supply Chain Resilience	SCR	-0.784	1.782
Cash Flow Resilience	CFR	-0.907	1.169
Knowledge Resilience	KR	-0.903	1.583
Organization Structure	OS	-0.2	-0.275
Organization Resilience	OR	-0.995	2.479

Remark: Normality assumption attained

The results of the normality test in Table 1 show that the values of Skewness and kurtosis for the constructs of the model were within the specified range.

### 8.2. Importance Level

Construct	Dimension	Item	Mean	RII	Ranking by category	Overall ranking	Importance level
Organization Structure	Formalization	FORM1	3.51	0.702	2	24	H-M
		FORM2	3.58	0.716	1	23	H-M
		FORM3	3.14	0.628	3	28	H-M
	Centralization	CEN1	3.24	0.648	1	27	H-M
		CEN2	2.88	0.576	2	29	M
		CEN3	2.86	0.572	3	31	M
		CEN4	2.78	0.556	4	32	M
	Size	SIZE1	3.42	0.684	1	26	H-M
		SIZE2	2.24	0.448	3	33	M
		SIZE3	2.88	0.576	2	29	M
Disaster Preparedness	DP1	3.69	0.738	5	18	H-M	
	DP2	3.51	0.702	9	24	H-M	
	DP3	3.76	0.752	4	15	H-M	
	DP4	3.8	0.760	3	13	H-M	
	DP5	3.65	0.730	8	22	H-M	
	DP6	3.66	0.732	6	20	H-M	
	DP7	3.66	0.732	6	20	H-M	
	DP8	3.91	0.782	2	8	H-M	
	DP9	3.99	0.798	1	4	H-M	
Business Continuity Management	BCM1	3.97	0.794	2	6	H-M	
	BCM2	3.96	0.792	3	7	H-M	
	BCM3	3.89	0.778	4	9	H-M	
	BCM4	4.05	0.810	1	2	H	
Organization Resilience	Supply Chain Resilience	SCR1	3.8	0.760	3	13	H-M
		SCR2	3.81	0.762	2	12	H-M
		SCR3	3.74	0.748	4	16	H-M
		SCR4	3.69	0.738	5	18	H-M
		SCR5	3.87	0.774	1	10	H-M
	Cash Flow Resilience	CFR1	3.98	0.796	1	5	H-M
		CFR2	3.85	0.770	2	11	H-M
	Knowledge Resilience	KR1	4.04	0.808	2	3	H
		KR2	4.28	0.856	1	1	H
KR3	3.7	0.740	3	17	H-M		

Figure 6. Ranking Criteria

It is evident from the ranking in Figure 6 that three items were identified as “High” importance levels, which are considered of prime importance for the selection of its constructs. These “High” importance indicators have RII in the range of 0.856–0.808. The results also show that twenty-five items were identified as “High-Medium” importance levels which are considered of secondary importance for the selection of its constructs. These “High-Medium” importance indicators have RII in the range of 0.798–0.628. Finally, five items were identified as “Medium” importance levels which are considered of third importance for the selection of its constructs. These “Medium” importance indicators have RII in the range of 0.576–0.448.

### 8.3. Factor Loading

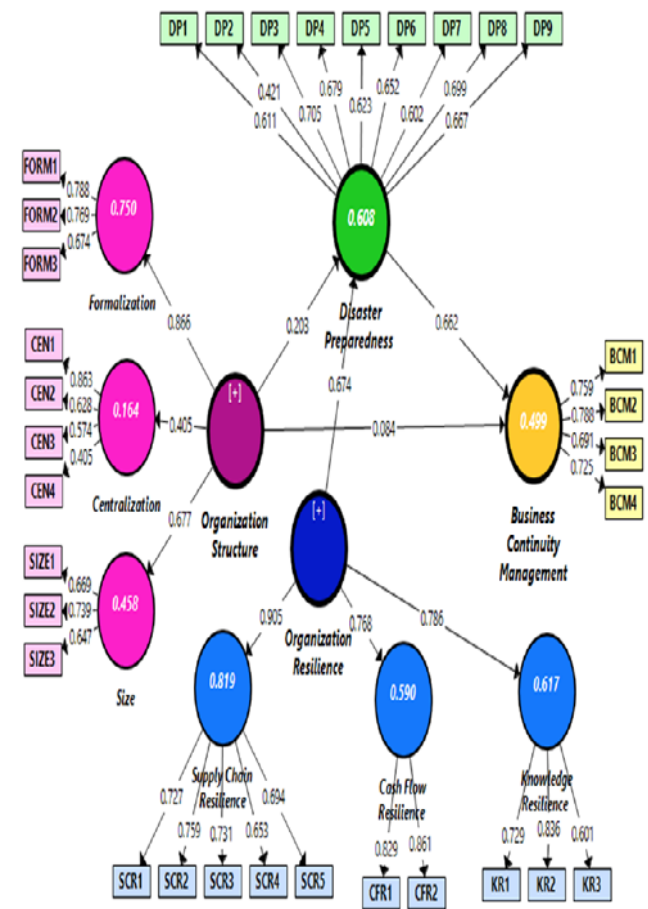


Figure 7. Measurement model (factor loadings)

### 8.4. Composite Reliability

Table 2. Composite Reliability

Construct	Composite Reliability	Remark
Business Continuity Management	0.83	Reliability Attained
Cash Flow Resilience	0.833	
Centralization	0.721	
Disaster Preparedness	0.856	
Formalization	0.789	
Knowledge Resilience	0.769	
Size	0.727	
Supply Chain Resilience	0.838	

### 8.5. Convergent Validity

Table 3. Convergent validity of measurement model analysis

Construct	Average Variance Extracted (AVE)	Remark
Business Continuity Management	0.55	Accepted
Cash Flow Resilience	0.714	
Centralization	0.408	
Disaster Preparedness	0.402	
Formalization	0.555	
Knowledge Resilience	0.531	
Size	0.471	
Supply Chain Resilience	0.509	

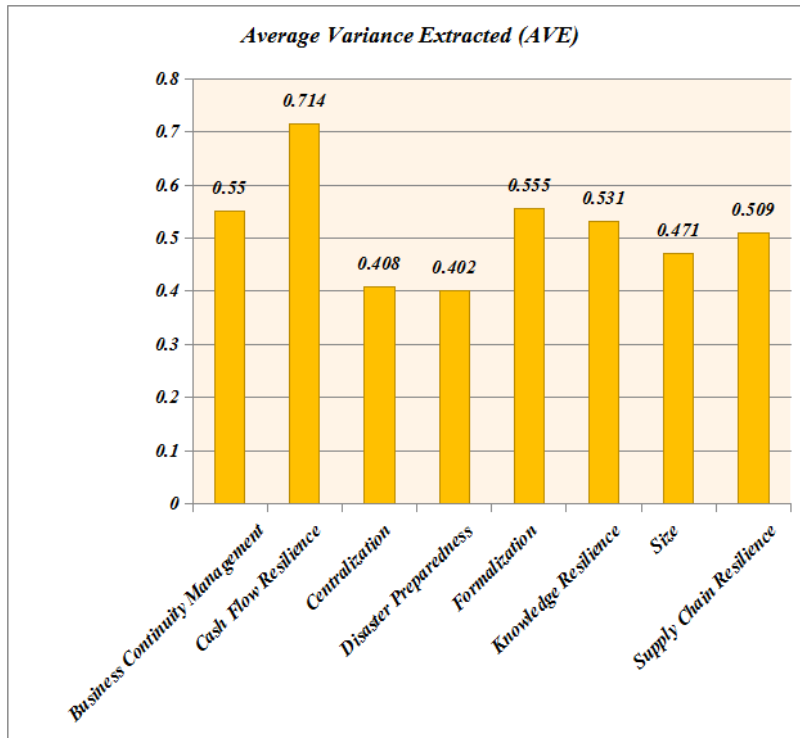


Figure 8. Average Variance Extracted

### 8.6. Descriptive Statistics and Multiple Correlations

	FORM	CEN	Size	DP	BCM	SCR	CFR	KR	OS	OR
FORM	1	0.035 <sup>NS</sup>	.319 <sup>***</sup>	.480 <sup>***</sup>	.407 <sup>***</sup>	.371 <sup>***</sup>	.260 <sup>***</sup>	.362 <sup>***</sup>	.694 <sup>***</sup>	.394 <sup>***</sup>
CEN		1	.071 <sup>NS</sup>	.013 <sup>NS</sup>	.061 <sup>NS</sup>	-.006 <sup>NS</sup>	.081 <sup>NS</sup>	-.017 <sup>NS</sup>	.546 <sup>***</sup>	.029 <sup>NS</sup>
Size			1	.228 <sup>***</sup>	.124 <sup>*</sup>	.167 <sup>**</sup>	.085 <sup>NS</sup>	.128 <sup>*</sup>	.721 <sup>***</sup>	.149 <sup>**</sup>
DP				1	.687 <sup>***</sup>	.681 <sup>***</sup>	.555 <sup>***</sup>	.598 <sup>***</sup>	.371 <sup>***</sup>	.734 <sup>***</sup>
BCM					1	.662 <sup>***</sup>	.582 <sup>***</sup>	.579 <sup>***</sup>	.303 <sup>***</sup>	.732 <sup>***</sup>
SCR						1	.540 <sup>***</sup>	.527 <sup>***</sup>	.274 <sup>***</sup>	.819 <sup>***</sup>
CFR							1	.503 <sup>***</sup>	.217 <sup>***</sup>	.852 <sup>***</sup>
KR								1	.243 <sup>***</sup>	.804 <sup>***</sup>
OS									1	.293 <sup>***</sup>
OR										1
Mean	3.412	2.940	2.845	3.737	3.968	3.782	3.912	4.005	3.066	3.900
SD	0.825	0.795	0.847	0.606	0.664	0.632	0.791	0.642	0.539	0.569

\*\*\*P < 0.001; \*\*P < 0.01; \*P < 0.05; NS Not Significant

Figure 9. Descriptive statistics and bivariate correlation

The correlation analysis suggests that most of the relationships were statistically significant. Correlation coefficients marked with three stars (\*\*\*) were significant at 0.001, i.e., 99.9% confidence level, coefficients marked with two stars (\*\*) were significant at 0.01, i.e., 99% confidence level, coefficients marked with one star (\*) were significant at 0.05, i.e., 95% confidence level, and finally coefficients marked with (NS) were not significant at 0.05, i.e., P-values were greater than 0.05. Moreover, the significant coefficients ranged from a weak relationship (0.124) to a strong relationship (.852).

### 8.7. Collinearity

Table 4. Variance inflation factors

Path	VIF
Disaster Preparedness --> Business Continuity Management	1.297
Organization Resilience --> Disaster Preparedness	1.2
Organization Structure --> Business Continuity Management	1.297
Organization Structure --> Disaster Preparedness	1.2
Remark: No problem exists	



8.8. Structural Model (Path Coefficients)

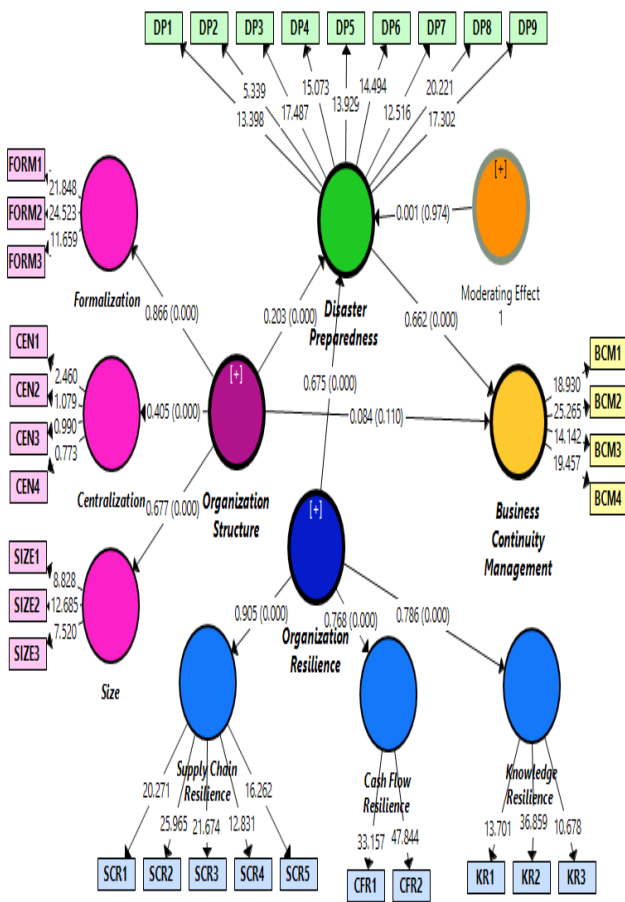


Figure 10. Structural model (Path Coefficients)

8.9. Results of Hypothesis Testing

Path	B	t-value	P-value	95% CI for B		Remark
				LL	UL	
<b>Direct Effect</b>						
H1: Organization Structure -> Disaster Preparedness	0.203	4.85	0.000***	0.116	0.281	Supported
H2: Organization Structure -> Business Continuity Management	0.084	1.598	0.11 <sup>NS</sup>	-0.014	0.184	Not Supported
H3: Disaster Preparedness -> Business Continuity Management	0.662	15.885	0.000***	0.566	0.731	Supported
<b>Indirect Effect</b>						
H4: Organization Structure -> Disaster Preparedness -> Business Continuity Management	0.135	4.703	0.000***	0.078	0.19	Supported
H5: Organization Resilience -> Disaster Preparedness -> Business Continuity Management	0.447	9.193	0.000***	0.346	0.536	Supported

\*\*\*P < 0.001; \*\*P < 0.01; \*P < 0.05; <sup>NS</sup> Not Significant; LL= Lower Limit; UL= Upper Limit; CI= Confidence Interval

Figure 11. Results of Hypothesis testing

The results of hypothesis testing in Figure 11 showed that Organization Structure construct yielded a significant direct positive effect on Disaster Preparedness since ( $\beta = 0.203, t = 4.85, P < 0.001, 95\% \text{ CI for } \beta = [0.116, 0.281]$ ), consequently, the first hypothesis is confirmed. Moreover, Organization Structure yielded a NON-significant direct effect on Business Continuity

Management since ( $\beta = 0.084, t = 1.598, P > 0.05, 95\% \text{ CI for } \beta = [-0.014, 0.184]$ ), consequently, the second hypothesis is NOT supported. Furthermore, Disaster Preparedness construct yielded a significant direct positive effect on Business Continuity Management since ( $\beta = 0.662, t = 15.885, P < 0.001, 95\% \text{ CI for } \beta = [0.566, 0.731]$ ), consequently, the third hypothesis is confirmed. The mediation analysis yielded a significant indirect relationship from Organization Structure construct to Business Continuity Management construct through the mediator variable Disaster Preparedness since ( $\beta = 0.135, t = 4.703, P < 0.001, 95\% \text{ CI for } \beta = [0.078, 0.19]$ ), consequently, the fourth hypothesis is confirmed. Furthermore, since the direct relationship from Organization Structure construct to the Business Continuity Management construct was not significant, and the indirect relationship from Organization Structure construct to Business Continuity Management construct through the mediator variable Disaster Preparedness was significant, so we were dealing with full mediation. The mediation analysis also yielded a significant indirect relationship from Organization Resilience construct to Business Continuity Management construct through the mediator variable Disaster Preparedness since ( $\beta = 0.447, t = 9.193, P < 0.001, 95\% \text{ CI for } \beta = [0.346, 0.536]$ ), consequently, the fifth hypothesis is confirmed.

8.10. Coefficient of Determination

Table 5. Square and Associated R Square Adjusted

Construct	R Square	R Square Adjusted	Remark
Business Continuity Management	0.499	0.496	Moderate
Disaster Preparedness	0.608	0.606	Moderate

The results of R Square are reported in Table 5. The R-Square value of Business Continuity Management equals  $R^2 = 0.499$ , meaning that about 50% of the variations in Business Continuity Management were explained by the variation in Organization Structure and Disaster Preparedness. Moreover, the R-Square value of Disaster Preparedness equals  $R^2 = 0.608$ , meaning that about 61% of the variations in Disaster Preparedness were explained by the variation in Organization Structure and Organization Resilience.

8.11. Effect Size ( $f^2$ )

Table 6. Effect Size

Relationship	f-square	Remark
Disaster Preparedness-> Business Continuity Management	0.675	Large
Organization Resilience -> Disaster Preparedness	0.967	Large
Organization Structure-> Business Continuity Management	0.011	No Effect
Organization Structure-> Disaster Preparedness	0.088	Small

Table 6 presents the  $f^2$  the effect size of the constructs. The results illustrate that Disaster Preparedness has a large effect on Business Continuity Management with  $f^2=0.675$ . Also, Organization Resilience has a large effect on Disaster Preparedness with  $f^2=0.967$ . Moreover, Organization Structure has a small effect on Disaster Preparedness since  $f^2=0.088$ , while it has no effect on Business Continuity Management since  $f^2=0.011$ .

**8.12. Goodness of Fit of the Model**

Table 7. GOF Criteria

Criteria	Guidelines	References
Goodness of Fit (GoF)	GoF less than 0.1, no fit; GoF between 0.1 to 0.25, small; GoF between 0.25 to 0.36, medium; GoF above 0.36, large.	(Wetzels, Odekerken-Schröder, & Van Oppen, 2009)

The criteria of GoF for deciding whether GoF values are not acceptable, small, moderate, or high to be regarded as a globally appropriate PLS model have been given in Table 7. According to these criteria and the value of

(GoF=0.535), it can be safely concluded that the GoF model has a higher level of fit to be considered a sufficiently valid global PLS model.

**8.13. Moderation Analysis**

According to Baron and Kenny (1986), To achieve the role of the moderator as a variable between an exogenous variable and an endogenous variable, they identified two main steps. The first step is that a moderating effect should be significant, and the second step is that the moderator should assist the intention to increase or decrease. The results of the moderation analysis in Figure 12 reveal that although the direct effect of Organization Resilience on Disaster Preparedness was statistically significant, the moderation effect of Organization Resilience on the relationship between Organization Structure and Disaster Preparedness is statistically not significant at a 5% significant level since ( $\beta \equiv 0.001$ ,  $t = 0.032$ ,  $P < 0.05$ , 95% CI for  $\beta = [0.068, 0.066]$ ), so the seventh hypothesis is not supported.

Path	B	t-value	P-value	95% CI for B		Remark
				LL	UL	
H6: Organization Resilience -> Disaster Preparedness	0.675	15.632	0.000***	0.588	0.758	Supported
H7: Moderating Effect 1 -> Disaster Preparedness	0.001	0.032	0.974 NS	-0.068	0.066	Not Supported

NS Not Significant; LL= Lower Limit; UL= Upper Limit; CI= Confidence Interval

Figure 12. Moderation analysis

**8.14. Hypothesis Testing Summary**

Effect	Hypothesis	Decision
Direct Effects	H1: Organization Structure positively affects Disaster Preparedness	Supported
	H2: Organization Structure positively affects Business Continuity Management	Not Supported
	H3: Disaster Preparedness positively affects Business Continuity Management	Supported
Mediation Analysis of Disaster Preparedness	H4: Disaster Preparedness mediates the relationship between Organization Structure and Business Continuity Management	Supported
	H5: Disaster Preparedness mediates the relationship between Organization Resilience and Business Continuity Management	Supported
Moderation Analysis of Organization Resilience	H6: Organization Resilience positively affects Disaster Preparedness	Supported
	H7: Organization Resilience moderates the relationship between Organization Structure and Disaster Preparedness	Not Supported

Figure 13. Hypothesis Testing Summary

## 9. Discussion

The first question examined in this research is the relationship between Organization Structure and Disaster Preparedness; while using Formalization, Centralization, and Organization Size as a dimension for Organization Structure, the results showed a direct positive effect of Organization Structure on Disaster Preparedness, with a significant positive correlation for Formalization and Organization Size with Disaster Preparedness; however, Centralization was non-significant. Supported by Herbane (2004) and Bakar (2015), When an organization is well prepared, practices are integrated into existing processes, and both staff and senior management demonstrate a high level of commitment, continuity practices are said to be embedded in the organization [69]; this embedding will result in positive business outcomes, such as the organization becoming more robust, capable of mitigating the risk of incidents, and recovering more quickly than competitors [49].

In addition, Organization Size is a reliable predictor of Preparedness at the organizational level, as larger organizations are more formalized in risk management initiatives and typically have the resources to invest in Disaster Preparedness measures [28].

Accordingly, in order to increase the level of Disaster Preparedness state, SMEs in Egypt shall have a clear Organization Structure and internally distributed organization chart, in addition to documentation for each process easily retrievable to the right person in time of need, including the steps and plans undergone during the crisis and recovery phases.

The second question examined in this research is the relationship between Organization Structure and Business Continuity Management System; the results showed a non-significant relationship between Organization Structure with its dimension of Centralization; however, there was a significant correlation between Formalization, Organization Size, and Business Continuity Management System. Despite what was mentioned in Kim and Amran's (2018) research, that Formalization and Centralization hurt the adoption of the Business Continuity Management System [9], this research in Egypt SMEs showed no effect for Organization Structure on Adoption of Business Continuity Management System, however, there is a correlation between Formalization and Business Continuity Management System and non-significant effect for Organization Centralization while both types of research supported the correlation of Organization Size with the adoption of Business Continuity Management System.

The third question examined in this research is the relationship between Disaster Preparedness and Business Continuity Management System; the results showed a significant direct positive effect on Business Continuity Management System. Egypt SMEs shall have a budget for an emergency, risk mapping, and employees' theoretical & practical training for dealing with risks, crisis analysis, and normalization procedures. As Disaster Preparedness strategy could help reduce the number of days that small business employees are out of work [29].

Supported by Odiyo research, which found that a company's Business Continuity Management System is

enhanced by the existence of a comprehensive Disaster Preparedness plan; that study discovered that having a well-defined Disaster Preparedness plan had a beneficial effect on an organization's Business Continuity Management [14].

The fourth question examined the indirect relationship between the Organization Structure and Business Continuity Management System through the mediator effect of Disaster Preparedness; the results showed a significant direct positive effect and since the direct relationship between Organization Structure and the Business Continuity Management was not significant, and the indirect relationship from Organization Structure construct to Business Continuity Management construct through the mediator variable Disaster Preparedness was significant, so we are dealing with full mediation.

The fifth question examined the indirect relationship between the Organization's Resilience and Business Continuity Management System through the mediator effect of Disaster Preparedness while using Supply Chain Management, Cash Flow Management, and Knowledge Manage as dimensions for Organization Resilience; the results showed a positive effect on Business Continuity Management System, with a significant positive correlation between Supply Chain Resilience, Cash Flow Resilience, Knowledge Management Resilience, and Business Continuity Management System.

Highly Resilient Organizations maintain a high Disaster Preparedness state, which positively affects adopting a Business Continuity Management System. Supported by Linnenluecke (2017), who mentioned that a highly Resilient SME maintains positive firm performance, is more adaptable to changing conditions, and is better positioned to capitalize on business opportunities than a less Resilient one [40]. Supported by Ruiz-Martin (2018) mentioned that Business Continuity Management and Organizational Resilience require learning, creative problem-solving, and adaptive innovation, as well as various other factors, such as proactive management and culture, asset improvement and refinement, data communication, preventative control, and mindful action [70].

The sixth question examined the relationship between the Organization's Resilience and Disaster Preparedness; the results showed a significant effect on Disaster Preparedness, with a significant correlation between Supply Chain Resilience, Cash Flow Resilience, Knowledge Resilience, and Disaster Preparedness.

As Resilience strategies result in a constant state of Disaster Preparedness and readiness to respond to unforeseen events, an increased capacity to respond and adapt to a changing environment, as well as the ability to recover and adjust, returning to the state before the event or to a new and strengthened state [12]. According to Chen (2021), organizational resources can reduce vulnerability and increase resistance to the effects of crises; It has also been noted that organizations' idle resources play an essential role in providing flexibility and enhancing their ability to respond to crises; consequently, learning Resilience and capital Resilience are essential elements of organizational Resilience [43].

Egypt SMEs shall have a quick response to supply chain disruption and effective collaboration with their



partners; all the supply chain processes shall be included in the Business Continuity planning process while ensuring effective Cash Flow Management and multiple sources of finance, all while adopting a culture in the firm that foster knowledge gain and disruption between its employee to cope with crises.

The seventh question examined the relationship between Organization Structure and Disaster Preparedness through the moderation effect of Organization Resilience; the results showed a non-significant effect of Organization Resilience on the relationship.

That is supported by the Conceptual work on Organizational Resilience that frequently quantified Resilience as a latent variable via the manifestation of organizational outcomes (e.g., financial volatility, sales growth, and survival rates) [71], however as mentioned in this research and supported by Sawalha (2015), Organization Resilience instills a Disaster Preparedness culture [30].

## 10. Summary of Findings

The current research aimed to generate a better understanding of the current practices of BCMS by SMEs in Egypt by examining the main factors leading to adopting a Business Continuity Management System through Studying the Organization's Structure, including the dimensions of Formalization, Centralization and Organization's Size, and its relation with the level of an Organization's Disaster Preparedness, besides Organization's Structure relationship with the Business Continuity Management, the research also studied the relationship between organization Disaster Preparedness and Business Continuity Management, the mediator effect of Disaster Preparedness on the relation between Organization Structure and Business Continuity Management, the relationship between Organization Resilience and Disaster Preparedness, and the indirect relation between Organization Resilience and Business Continuity using Disaster Preparedness as a mediator, finally the moderating effect of Organizational Resilience between Organizations Structure and Disaster Preparedness, using the enablers of Organization Resilience like Supply Chain Management, Cash flow management, and Knowledge Management .

The results showed a direct positive effect of Organization Structure on Disaster Preparedness, with a significant positive correlation between Formalization and Organization Size with Disaster Preparedness; however, Centralization was non-significant.

There was a non-significant relationship between Organization Structure and its dimension of Centralization and Business Continuity Management System; however, there was a significant correlation between Formalization, Organization Size, and Business Continuity Management System.

Disaster Preparedness showed a significant direct positive effect on Business Continuity Management System.

The indirect relationship between the Organization Structure and Business Continuity Management System through the mediator effect of Disaster Preparedness

showed a significant direct positive effect with full mediation.

The indirect relationship between the Organization's Resilience and Business Continuity Management System through the mediator effect of Disaster Preparedness while using Supply Chain Management, Cash Flow Management, and Knowledge Manage as dimensions for Organization Resilience; the results showed a positive effect on Business Continuity Management System, with a significant positive correlation between Supply Chain Resilience, Cash Flow Resilience, Knowledge Management Resilience, and Business Continuity Management System.

The relationship between the Organization's Resilience and Disaster Preparedness, The results showed a significant effect on Disaster Preparedness, with a significant correlation between Supply Chain Resilience, Cash Flow Resilience, Knowledge Resilience, and Disaster Preparedness.

The relationship between Organization Structure and Disaster Preparedness through the moderation effect of Organization Resilience showed a non-significant effect of Organization Resilience on the relationship.

Based on the above, in order to increase the level of Disaster Preparedness state, SMEs in Egypt shall have a clear Organization Structure and internally distributed organization chart, in addition to documentation for each process easily retrievable to the right person in time of need, including the steps and plans undergone during the crisis and recovery phases. The Organization Structure does not affect adopting a Business Continuity Management System, so organization managers shall consider having a budget for an emergency, risk mapping, and employees' theoretical & practical training for dealing with risks, crisis analysis, and normalization procedures to reduce the number of days for business discontinuation.

Highly Resilient Organizations maintain a high Disaster Preparedness state, which positively affects adopting a Business Continuity Management System. Accordingly, Egypt SMEs shall have a quick response to supply chain disruption and effective collaboration with their partners; all the supply chain processes shall be included in the Business Continuity planning process while ensuring effective Cash Flow Management and multiple sources of finance, all while adopting a culture in the firm that foster knowledge gain and disruption between its employee to cope with crises.

## 11. Limitations

Like any other research, the current study has limitations, which must be discussed here; these limitations are primarily the result of the systematic literature review, problems with the research methodology, and the Interpretation of the results; as a result, while the study's findings are exciting and valuable, they should be viewed in light of its limitations, and caution should be exercised when interpreting such findings, The following are the inherent limitations of the current research study: the questionnaire was distributed online for the residents in Egypt working in or managing SMEs, the research has excluded larger firms, with around 46% of the respondent

are owners or managers, a fear arises that may there is a bias towards the Formalization and Centralization procedures or even the Disaster Preparedness plans, in addition, the researcher has chosen only three dimensions for the Organization Structure (Formalization, Centralization & Size), which limits the full effect study of Organization Structure on Business Continuity Management.

## 12. Recommendations for Future Research

There is a clear need to investigate more in the area of Business Continuity Management in Egypt SMEs; in order to overcome the limitation in the study, there is a need to have also a semi-structured interview and indoor assessment for the firms; in addition to building on the current study framework and expand it by adding more dimensions for Organization Structure like complexity and span of control, adding new constructs like for example organization innovation or external environment; further, the research did not distinguish between industries; accordingly, it is favorably to issue this study according to each industry and observe the variation in results.

## 13. Contribution

The study has proposed a new framework for Business Continuity Management System; to be applied in SMEs; to the researcher's Knowledge, it is the first research in Egypt to study the Management of Business Continuity in Egypt SMEs by identifying the Organization Structure and its relation with Disaster Preparedness, the relation between Disaster Preparedness and BCMS, also the indirect effect between Organization Structure and BCMS through the mediator effect of Disaster Preparedness while exploring the indirect relation between Organization Resilience and BCMS, the Organization Resilience relation with Disaster Preparedness, and finally the moderating effect of Organization Resilience on the relationship between Organization Structure and Disaster Preparedness.

The conceptual framework is considered novel as it will add to the knowledge base of previous research in Business Continuity Management systems.

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