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THE IMPACT OF CRISES SITUATIONS ON THE DEVELOPMENT OF BUSINESS CONTINUITY MANAGEMENT DURING THE COVID-19 PANDEMIC IN JORDANIAN HOSPITALS

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ABSTRACT: In this paper, the researchers have investigated the effect of various crises on the development of the Business Continuity Management (BCM) process in Jordanian hospitals. They used the quantitative research design technique to fulfil all the study's objectives. After that, they also tested whether their hypothesised model could be used for developing the BCM. After distributing questionnaires amongst the supervisors working in 7 private hospitals in Amman, Jordan, they collected all the data. Then, they carried analysed and sorted all the data using the SPSS software. The study results showed that the hospitals in Jordan were eager to maintain security and stability in the case of a crisis. Additional statistical tests presented evidence regarding the positive effect of different factors (such as external/ internal crises, natural disasters, operational and strategic risks, and the probability of recurrence of a crisis) on the BCM development in Jordanian hospitals. Here, the researchers have attempted to offer insights and knowledge to help practitioners, academicians and policymakers.

KEYWORDS: crises, Jordanian hospitals, business continuity management, probability of crisis recurrence

Introduction

BCM refers to the process where the management makes plans in the case of a crisis. The organisations usually develop these plans after identifying the probable threats and studying their effect on the daily operations (Kato & Charoenrat, 2018). The BCM process ensures that the organisation can still offer good services despite a disaster or crisis, thereby allowing them to preserve its reputation and maintain the inflow of revenue (Azadegan et al., 2020). Historically, the BCM process was developed in the 1970s as a response to the operational and technical risks that often delayed the firm's recovery from some interruptions or crises (Coombs, 2014).

The recent COVID-19 pandemic has significantly affected the operations of governments across the globe since all the officials are operating under uncertainty and facing many complicated trade-offs and social, economic and health challenges arising due to the pandemic. In 2020, this pandemic affected >50 million people living in different countries worldwide. By mid-2020, a majority of the countries had to impose strict lockdowns with extreme containment measures to prevent the spread of the virus. In addition to the human and health tragedy, the pandemic also triggered one of the most severe economic crises since World War II. Economists across the globe have stated that a majority of the economies would not be able to achieve their 2019 output levels till at least 2022 (OECD, 2020).

It was noted that many natural disasters and crises could disrupt the organisation's operations, which could delay their development (Bakar et al., 2019). Some of these crises can significantly affect the organisations' business operations, workforce, and property, whereas others could even threaten the organisation's existence and lead to its bankruptcy (Abo-Murad et al., 2019).

As mentioned above, any crisis or disaster disturb an organisation's existing and future business performance. A few statistics have stated that 75% of the organisations that do not have a continuity plan would fail within 3 years after the occurrence of a disaster or crisis (Fabeil et al., 2020).

A majority of the surveyed Jordanian organisations reported challenges, such as low demand and supply, decreased cash flow and a disruption in their value, owing to the containment measures that were implemented due to the COVID-19 pandemic (Kebede, 2021).

The main aim of the BCM was to build and improve the organisational ability to offer services and carry out primary tasks owed to the society during and after the occurrence of any crisis, disaster or emergency which interrupts its operations for some time (Gallagher, 2003). However, the problem of managing unexpected disasters (crises) is regarded as a major challenge

that affects institutions and business organisations. The COVID-19 pandemic is a prime example of an unexpected crisis that could affect all organisations without any exemption (Fabeil et al., 2020).

Hence, it is important to understand the risks and the types of crises that could disrupt or force organisations to stop their operations. This type of study could help reduce or eliminate the recurrence or negative effects of the crises, both on the firms and parties interested in the organisation's operations (Lindstorm, 2012). Development of the BCM could benefit the organisations since it could allow the firms to become more resilient, protect their reputation, fulfil all regulatory requirements and boost the morale of their employees (Herbane et al., 2004).

It was noted that disasters, emergencies, and similar other crises could threaten the capability of a healthcare organisation to provide treatment, care, operate and serve the community. Out of all other organisations, the healthcare sectors need to develop an effective and concise Business Continuity Plan (BCP) for protecting their employees and patients. The healthcare Business Continuity needs to constantly offer its services to society during a crisis or disaster (Geelen-Baass & Johnstone, 2008). Hence, the development of a BCM process is regarded as an important variable. In their study, Wong (2009) highlighted the important role played by BCM in strategic management. He highlighted the significant role played by BCM in preserving future organisational competitiveness and organisational success.

As mentioned above, the researchers have attempted to identify the features and nature of the BCM in a crisis or emergency. For this purpose, they studied the hospitals in Jordan. They identified the effect of emergencies or crises faced by these hospitals that encouraged them to develop their BCM and offer better services to the people. The researchers selected the hospitals in their study as these organisations played a primary role in offering healthcare and medical services to the people at all times. Moreover, these organisations could successfully manage their operations and offer services without interruptions even during a crisis or disaster.

Literature review

Currently, business organisations are operating in a turbulent and unstable environment, facing recurrent crises (Kindleberger & Aliber, 2005). The COVID-19 pandemic has even affected the local public organisations. Some of these firms faced a slowdown or complete cessation of their activities, especially those related to tourism, leisure, entertainment, transport, and culture. A threat to equity, capitalisation and business failures have affected the company's shareholders (FEPL, 2020).

A majority of the organisations have to face some common threats like product contamination, labour strike, terrorist attacks, technological breakdowns, pandemics and natural disasters (Cheval, 2012; Bharagva, 2012; Gupta et al., 2010). These crises can significantly affect any organisation's workforce, property, and business activities (Pearson & Clair, 1998). Moreover, a few major threats can even threaten the organisation's existence and lead to its bankruptcy and disappearance (Coombs, 2014; Wang et al., 2015; Abo-Murad & Al-Kharabsheh, 2019). Therefore, there is a need to implement proactive measures which can help the organisations prevent crises and recover.

The crises are unavoidable, and it becomes difficult for the organisations to remain immune to their negative effect (Wang et al., 2015) and continue their work operations, which has led to the development of the BCM concept (Swalha, 2013). BCM is an important process that ensures that the firms can maintain their normal business activities during a crisis without any disruption (Gallagher, 2003). In their study, Al-Kharabsheh et al. (2022) highlighted the importance of human resource management from the crisis management perspective.

Business continuity management

In 2011, north-eastern Japan was hit by a powerful earthquake after a devastating tsunami severely affected its national economy. These natural disasters also showed a global effect as the Japanese auto parts supply chains that supplied components to auto assembly plants in the world were disrupted (Ando & Kimura, 2012).

Similarly, in 2011, the Chao Phraya River in Thailand flooded, threatening the regional, national and global economy. As a result, Thailand's commercial and industrial sectors were affected and disrupted supply chains (Komori et al., 2012).

Many global platforms are determining the resulting economic damages and understanding the significant role of the private sector in their management as a result of global crises and disruption of important economic sectors as a result of natural disasters. The 4th session of Global Platform for Disaster Risk Reduction, supported by the United Nations, was held in 2013. All the participants highlighted the need to improve resilience and develop new opportunities that established public-private partnerships for improving risk management. They stated that more efforts need to be made that use an administrative approach for decreasing the consequences and effects of the disasters on the functioning and development of the companies (Baba et al., 2014).

Furthermore, due to the joint efforts of the private and public sectors, regional and international researchers and consultative institutes have developed a system that can enable organisations to maintain their operations despite crises. Hence, a British Covenant initiative for specifications and standards established the British Standard, i.e., BS 25999, which developed a process that enabled the corporate management to plan and implement business continuity even in the case of a crisis. This standard called the Business Continuity Management System (BCMS) or the Business Continuity Plan (BCP) also offered solutions for overcoming a crisis as quickly and efficiently as possible. After this mechanism proved to be successful, an interactive management tool that helped the organisations before and during a crisis and also allowed their recovery was included. The International Organisation for Standardisation ISO (2012) issued a standard that stated that this tool could help protect the institution from disasters and crises like fires, floods, environmental inheritance, thefts, terrorist attacks, technical breakdowns, and diseases that could affect the workforce. This system also determined all the probable threats and their effect on the workforce. After that, it developed appropriate plans for addressing these issues before their occurrence or reducing their impact after their occurrence (BSI, 2012).

The above results indicated that mainly the coping or response strategies were used for managing the crises. It was also noted that the changing path strategy was the most popular strategy implemented by the organisations during a crisis. In this study, the researchers have presented a few novel insights regarding crisis management in Jordanian hospitals since they could contribute to this field of research in developing countries (Abo Murad et al., 2021).

Crisis management

Crisis management has been practised for several decades. It refers to the interactions and decisions made by people in the case of a crisis or emergency. However, it was defined using different terms like leadership prowess, management diplomatic skills in the past. Despite the different names, this practice determines the actual test of a person's ability to face any crisis or emergency using their creative capability (Harwati, 2013; AL-Kharabsheh et al., 2014).

The increasing number of crises and a change in their characteristics (wherein the crises have become more dynamic, abnormal, and complicated) have garnered much academic interest. The researchers are placing a lot of importance on proactive crisis management (Roux-Dufort, 2000). Many researchers have started focusing on proactive crisis management studies

(Jaques, 2010; Lagadec & Topper, 2012). Hence, several academicians are encouraging people to build their organisational skills and abilities that could allow them to confront dynamic, abnormal and complicated crises, instead of focusing on a rigid set of processes (Abo Murad et al., 2021).

Crisis management in the health sector and hospitals

The recent technological and scientific developments in the health sector have made it very dynamic (Geelen-Baass & Johnstone, 2008). Because of the growing population, there has been an increase in the number of unrecognised and new health threats, further highlighting the need to establish a regulatory framework for the health sector to manage the health crises (Liu et al., 2018). Regarding the management of health crises, an effective and coordinated operational action plan needs to be developed by the experts and then supervised by administrative staff. This can be implemented in the case of a health threat affecting the population, irrespective of the crisis length and duration (Efstathiou, 2008).

Many occurring crises and disastrous situations hamper the smooth operation of businesses across the globe. However, health-related disasters are one of the most severe types of crises as they directly affect the well-being and life of individuals. Hence, health crisis management systems play a vital role in overcoming health-related disasters, after adopting some plans that allow the smooth operation and continuation of all activities even in the presence of a crisis. These systems also help in controlling the spread and negative effects of the health crisis. For instance, the coronavirus pandemic that arose in 2019 led to many health crises that highlighted the underlying issues existing in the healthcare system across the globe (Blumenthal et al., 2020). This pandemic led to reforms for improving the ability of the healthcare administrations and governments to cope with similar future health disasters and crises.

Hospitals play a vital role in coping with healthcare crises and disaster management processes. Everyone expects the hospital staff to offer care, compassion and extensive support to the injured or uninjured disaster survivors. In the case of disasters like a terrorist attack or pandemic, the hospital communicators need to effectively communicate with their internal staff, external bodies and other organisations (Liu et al., 2018).

Disaster planning in a majority of the hospitals is very primitive and can only fulfil the minimum standards established by the governments. For instance, though there is an increase in the number of terrorist attacks, the hospitals are not equipped to face and tackle this form of crisis. Furthermore, there is a large gap between the administrative and planning processes, with

regards to the willingness of the hospitals to handle and respond to the biological and chemical crises, nuclear or radioactive crises and even pandemics (Kaji & Lewis, 2006; Born et al., 2007).

Business continuity management in hospitals

Often the health care facilities are seen lacking during a crisis, which can be attributed to a shortage of human or material resources related to this sector. This gives rise to the need to determine the factors that can help improve hospitals' performance in crises by implementing some plans or managing the business continuity during crises.

Jafar and Taneja (2017) noted that many healthcare facilities and hospitals in India faced the risk of disruption owing to disasters. They also stated that healthcare facilities must always be accessible, particularly during a crisis. Furthermore, they presented some factors that affected the application of BCM in the hospitals during a crisis, which included a lack of skills, no awareness regarding the risks and disaster management, low finances, lack of an effective emergency contingency plan, no awareness about the international protocols and agreements or even government plans and directions.

For implementing the proper management of business continuity plans in the hospitals during a crisis, the administrative team must possess a set of following qualifications and skills (Hendrickx et al., 2016):

- Ability to communicate effectively.
- They must be able to work with the high-tech and technology administrators.
- Should think clearly during the crisis.
- Must be able to analyse effectively.
- They need to influence and manage effectively.
- They should be able to maintain the smooth operation of the hospital during a crisis and handle the subsequent stress.
- They need to objectively analyse the cost and benefits and also make a few unbiased recommendations.
- They also must benefit from the earlier experiences regarding the BCM process.
- They must be able to learn and understand the existing and new management practices.

Furthermore, another factor that challenges the healthcare and hospital sectors that requires the adoption of the BCM process is related to medical data. It is noted that the healthcare sector relies significantly on the data that gets circulated between the insurance companies, hospitals, nursing stations, doctors, pharmacies, etc. Though the health centres maintain high confiden-

tiality and secure the medical data, it can still be subjected to a tragic situation, either man-made or natural. For instance, the medical data possessed by Anthem insurance was breached, which affected more than 80 million patient records. Such incidents highlight the significance of maintaining business continuity and contingency plans. The health care sector often follows the earlier processes and arrangements that were established for the smooth and safe operation of the centre during or after a crisis. These are not only essential but also legally needed (Ripley, 2015).

Public and private Jordanian hospitals have faced many crises in the last few years (Al-Kharabsheh, 2018). After the arrival of several refugees into Jordan from the neighbouring countries that were affected due to revolutions, the Jordanian hospitals faced a lot of pressure due to a significant increase in the need for healthcare and medical facilities. Hence, business continuity is regarded as necessary since the healthcare sector cannot be idle for a single day as it could affect the lives of people and society.

Types of crises situations in modern business organisations

A. Natural disasters

A disaster can be defined as an event that occurs at a particular place or time, either caused due to human errors or nature, is unintentional or intentional, often results in a loss of property or lives and requires a lot of effort to overcome that can exceed the abilities of the whole country or several countries (Al-Sahli, 2011).

Natural disasters are categorised based on their reason for their origin, such as water-based disasters (i.e., floods), geological-based disasters (i.e., volcanoes, earthquakes, landslides, and cracks), climate or wind-based disasters (storms, hurricanes, etc.) or a disaster that is caused because of the aggravation of natural disasters like the spread of diseases, epidemics, pollution or starvation (Abu Zayed, 2015).

Many countries, even developed ones, have failed to control or manage the loss that occurred due to natural disasters. After reviewing all the probable reasons, it was noted that the organisations related to risk management of these disasters could not face larger disasters or prepare themselves using preventive or proactive strategies (Kapucu & Garayev, 2011). The developed countries have realised the importance of BCM and adopted BCM processes to tackle the risks arising from disasters. In other countries, the governments have started understanding the significance of BCM and encouraged the organisations to undertake BCM processes for protecting themselves against disastrous situations (Kim & Amran, 2018).

B. Internal and external crises

Organisations worldwide are facing a higher number of dynamic, complex, and abnormal crises. These crises are caused by many factors existing within and outside their work environment (Abo-Murad et al., 2021). The Jordanian healthcare organisations face many different types of crises like floods, natural disasters, terrorist attacks, political instability, economic inflation, and government processes (Al-Kharabsheh, 2018). Recently, the Covid-19 pandemic has also significantly crippled the healthcare system in the country. Furthermore, many internal crises like a shortage of human, material and technological resources, ineffective communication channels between the organisations and other related institutes and weak leadership affected the health care sector (Al-Serafi, 2008).

Numerous business owners have presented their view regarding the type of support they needed for handling a crisis, such as direct financial support, pay subsidies, access to credit and certain policies for decreasing the business costs, work permits, licensing fees and implementation of solvency regulations and laws (Kebede, 2021).

C. Operational and strategic risks

The strategic and operational risks were related to an organisation and its activities. One important factor related to BCM that allows the organisations to face external crises is related to the type of insurance that can cover the undesirable effects of the crisis. The operational and strategic risks can lead to the destruction of a complete organisation. Furthermore, it was noted that the operational and strategic risks along with a natural disaster could completely “destroy” an organisation in the absence of a BCM model that can reduce the negative effects of the disaster (Filipović et al., 2018).

The risks mentioned above pose a real threat to the continuous business operation of the organisations in normal situations or crises. Hence, it must be prioritised by the management and administrators of any organisation. Some important strategic and operational risks affecting the smooth operations of the health care sector in Jordan are as follows (Jordan University of Science and Technology, 2018):

Health and Human Risks: There is a higher risk of spreading infection owing to infectious viruses or diseases, injuries, asphyxia, or trapping of people during fires. This factor also includes the risk that the organisations cannot control the spread of disasters owing to standard or systematic contexts.

Risks associated with the public safety measures: These includes the risks due to compressed gases, lack of knowledge regarding the procedure to be followed in the case of fire, fires resulting due to storage of flammable liquids, lack of fire-protection devices (like alarm systems, extinguishing

devices, etc.), absence of indicative or warning signs for exits in the case of an emergency; lack of service rooms, risks faced by contractors during projects, operational and maintenance risks, risk of renovation within the buildings and risks associated with climatic conditions like dust hazards, storms, rain, torrential hazards, sunstroke, etc.

Technological/informational risks: These include risks such as computer virus attacks, hacking, unauthorised access to the technical and administrative departments, use of fake computer software, unauthorised modification of information or data, data compatibility or accuracy, malfunction of systems or hardware.

Financial risks: The financial risks include a lack of government support, risk of scarcity of existing material resources or the ability of the corporation, risk of managing financial resources or assets, administrative and financial operational risks, and also risks associated with the mismanagement of financial liquidity.

D. Probability of the recurrence of a crisis once the crisis has occurred and overcome, irrespective of the effectiveness of the response displayed by the organisations, it must be regarded as an experience that teaches the management a few lessons. The crisis management processes have to be assessed to understand the effective steps and the areas that need improvement. For this purpose, the management should set up a separate crisis assessment team/committee, in addition to the crisis management team, for evaluating their efforts for combating the crisis and recommending alternative processes for handling the crisis. This could help them decrease the probability of the recurrence of the crisis and resulting damage as they can incorporate the lessons derived from the organisation's crisis management system, thereby improving their techniques for preventing, preparing and responding to the crisis.

After that, the organisations have to identify and restore any damage occurring to the workflow during this crisis, especially the damage to their reputation. A majority of the organisations use communication strategies to explain their position during the crisis, which is sufficient; however, sometimes additional efforts need to be made to repair their reputation. For determining these steps, the organisational management must assess the different effects of the crisis after comparing the pre-crisis criteria to the public opinion and perceptions of their stakeholder perceptions regarding the organisational performance. Then, they need to review all the factors responsible for the earlier crisis and their resulting negative effects. Finally, the organisation releases a few updates related to the processes they have undertaken to prevent the recurrence of the crisis, describe the various corrective activities

that they have implemented, and publish the potential results from their investigation of the crisis (Coombes, 2014).

Impact of the COVID-19 pandemic on the Jordanian organisations

The organisations investigated in this study reported some challenges like decreased demand and supply, reduced cash flow, and a disrupted supply chain, owing to the measures they used to respond to the COVID-19 pandemic. Only 7% of the organisations were able to operate without any issues, while 39% of the investigated organisations were operational with a reduced staff (7%) or lower working hours (16%) or both (16%). However, 51% of the investigated organisations had to be temporarily shut down (Kebede, 2021).

42% of the organisations stated that they would be able to pay their workers under the existing conditions only for one month. In comparison, 42% of the organisations could pay their workers only for three months. Furthermore, a few micro-businesses (55%) and small organisations (44%) stated that they did not possess the means to pay their workers' salaries. In contrast, the medium (33%) and large organisations (23%) could pay their worker wages for another month. Around 26% of the firms stated that during the time of this survey, they could not remain operational for even a month; whereas 30% of the organisations mentioned that they could operate for 1-3 months; 5% stated that they were operational for 4-6 months; while only 13% of the organisations would operate for ≥ 6 months. Furthermore, 27% of the surveyed organisations stated that they did not know how long they would remain operational if the pandemic situation prevailed in the future (Kebede, 2021).

A majority of the employees, who could not come to work due to lockdowns, were still receiving partial (20% of the employees) or complete (71%) salaries from their organisations. The results indicated that the employees working in larger organisations usually received their complete salaries compared to those working in smaller organisations. It was also noted that $\approx 40\%$ of the investigated organisations had stopped their payments to social security due to the pandemic, thereby using the waiver introduced in Defence Order 1. This observation was more commonly noted amongst the smaller organisations than large firms. Furthermore, 45% of the micro industries had stopped their payment entirely compared to 34% of the SMEs (with ≥ 100 workers).

The results indicated that 52% of the surveyed respondents were confident that they could weather the pandemic and resume their businesses,

whereas 20% of the organisations were not confident about their economic future. However, when they were asked questions about the financial condition before the pandemic, 25% of the respondents stated that they were in loss; while 46% stated they could only break even.

The researchers concluded that a majority of the companies on the verge of bankruptcy after the pandemic were already facing financial difficulties before implementing the lockdown measures. The home-based and micro industries were very apprehensive about their future. Furthermore, it was concluded that the capability of an organisation to survive the financial crisis depended on several factors, like how agile the firms were in adapting new business techniques and ensuring their business continuity. However, only 25% of the surveyed organisations possessed a business continuity plan. Regarding the measures executed for preventing the spread of the coronavirus at the workplace, >72% of the surveyed organisations possessed disseminated protective gear, such as gloves and masks, whereas 55% possessed better cleaning and sanitising facilities at the time of this survey.

However, 23% of the micro-organisations did not undertake any such measures. 67% of the surveyed organisations were unaware of any support packages offered by the government for helping them reduce the effect of the crisis even by April-end (Kebede, 2021).

53% of the firms considered direct financial support essential as it would allow them to cope with the crisis. However, 60% of the micro-enterprises and 43% of the SMEs (with ≥ 100 employees) stated that they needed this type of support. In addition, 42% of the surveyed organisations and 68% of the SMEs (with ≥ 100 employees) proposed wage subsidies for coping with the crisis, while 20% of the organisations requested access to credit (Kebede, 2021).

Hypothesised model and hypotheses

The researchers developed a hypothesised model based on the arguments mentioned above (Figure 1). This hypothesised framework was designed using the variables described above, as presented in Figure 1. The Independent Variables (IVs) included in the framework were crises (such as natural disasters, internal and external crisis issues, operational and strategic risks, and the probability of a crisis recurrence). In contrast, the Dependent Variable (DV) included the development of the BCM. This hypothesised model was used for investigating the direct effect of the crises on the development of the BCM in Jordanian hospitals.

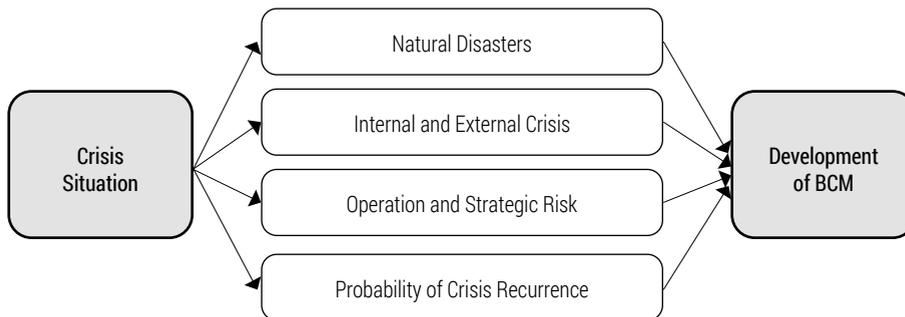


Figure 1. Hypothesised model

Source: author's work based on that described by Filipović et al., 2018.

The primary hypothesis investigated in this study was that “the Crises and Emergencies significantly and morally affected the development of the BCM process in the Jordanian hospitals.” This objective was investigated in small parts as follows:

- H1: The internal crises were associated with the development of the BCM in Jordanian hospitals.
- H2: The external crises were associated with the development of the BCM in Jordanian hospitals.
- H3: Natural disasters crises were associated with the development of the BCM in the Jordanian hospitals.
- H4: Operational and strategic risks crises were associated with the development of the BCM in the Jordanian hospitals.
- H5: The probability of the recurrence of a crisis also affected the development of the BCM in Jordanian hospitals.

In the past two decades, many phenomena threatened the societal progress and the stability and security of the countries, such as terrorist attacks, hacking, the spread of epidemics, and climate changes arising due to environmental damage. Such disasters affect every individual on the planet. Hence, it is necessary to adopt a qualitative administrative behaviour that can help in maintaining business continuity in difficult situations, especially in the essential sectors, such as hospitals, that offer basic services to the citizens. This can only be achieved by ensuring that these sectors' normal business and operations are carried out without any interruptions. This approach gets significantly affected during a crisis or disaster, which hinders the success of a BCM process. Hence, a lot of experience and strategic thinking is needed. The management can benefit from their past experiences and make future decisions for preventing the recurrence of a crisis or at least enabling recovery from these situations.

Research methodology

In this study, the researchers implemented a quantitative technique for data collection. First, they used a descriptive-analytical process by deriving conclusions from the references and the published literature related to the topic under investigation. They developed a self-administrated questionnaire for investigating the different variables (Filipović et al., 2018). These questionnaires were distributed amongst the respondents through email or hand-delivered. The respondents included the directors of various administrative departments, their deputies, assistants, heads of departments and consultants in the Jordanian hospitals.

A total of 70 questionnaires were distributed amongst the different respondents, while 61 could be retrieved and used for data analysis, i.e., 87% of the distributed questionnaires. This questionnaire included 2 Sections. Section 1 aimed to collect demographic information about the respondents. Section 2 included items for describing the study variables. The researchers used a 5-point Likert scale ranging from 1 (i.e., least important) to 5 (most important) to determine the answers for every questionnaire item. All data were analysed using the SPSS software.

Results and discussion

Profile of the respondents

Table 1 presents the demographic information of the respondents.

Table 1. Demographic profile of respondents

Category	Description	No.	%
Gender	Male	45	73.8
	Female	16	26.2
	Total	61	100.0
Age	19-24 y	34	39.3
	25-30 y	16	26.2
	>30 y	1	1.6
	Total	61	100.0
Educational	University	48	78.7
	Diploma	13	21.3
	Secondary certificate	0	0
	Total	61	100.0

Category	Description	No.	%
Occupational level	Top management	13	21.3
	Senior management	44	72.1
	Lower management	4	6.6
	Total	61	100.0
Years of experience at the hospital	<5 y	24	39.3
	5-10 y	20	32.8
	≥10 y	17	27.9
	Total	61	100.0

Source: author's work.

Part one: Items related to the Independent Variable (i.e., crises)

A. Cases and crises (internal and external) experienced by the hospitals

Table 2 presents the average values derived from the questionnaire for the hypothesis that “Cases and conditions of crises (internal and external) affected the development of BCM in Jordanian hospitals”, which ranged between 4.08 and 4.56. The maximal value for the statement that “Hacking medical information and disrupting access presents a crisis to the employees” was 4.56. This indicated that the hospitals were concerned about their security system, especially in the case of a crisis occurrence. The second paragraph stated that the “Prevalence of any viral or bacterial infection in the hospital led to a crisis in the hospitals” showed an average value of 4.33, indicating that the hospitals were eager to implement their designed plans accurately.

The lowest mean value was noted for the 4th paragraph that stated that “Theft or any misuse of narcotic substances presented a crisis”, i.e., 4.08. Thus, it could be concluded that the private hospitals tried to prevent the development of any crisis (either internal or external) by establishing smart objectives and designing detailed plans, which had to be implemented accurately and appropriately. Thereafter, the hospital management acquired valuable feedback so that they could make any changes in their plans.

Table 2. Results for the Mean and Standard Deviation of the items related to the Crises variable in a descending order

No.	Statement	Mean	SD	Degree
1	Hacking of medical information and disabling access to it – a security effect at the time of the crisis	4.56	0.5	High
2	Prevalence of a bacterial/viral infection in the hospital	4.33	0.63	High
3	Insufficient numbers of workers due to the crowded hospital with patients and auditors	4.2	0.65	High
4	Fatal medical errors in diagnosis and dispensing of the drug	4.13	0.78	High
5	Medical errors resulting from the negligence of the nursing staff exacerbate the patient's condition and death	4.1	0.72	High
6	Theft or misuse of narcotic drugs	4.08	0.76	High
7	Part of the building collapses, or the building is cracked	4.2	0.63	High
8	A fire broke out in the hospital	4.18	0.59	High
9	Suspension of work by the medical staff as a matter of participation in sit-ins and occupational strikes	4.18	0.65	High
Total rate		4.23	0.52	High

Source: author's work.

B. Natural disasters

Table 3 presented the mean values derived from the questionnaire for the hypothesis that “Natural Disasters affected the development of BCM in the Jordanian hospitals”, ranging between 4.03 and 4.26. The maximal value was noted for the second statement that “Torrents that impeded the movement of ambulances and affected the transportation of the patients to the hospitals” showed a mean of 4.26 and a high degree. This was attributed to the nature of the hospitals and the fact that they need to monitor natural disasters constantly. Furthermore, the 3rd statement that “Heavy thunderstorms could cause a power outage that affected the important devices in the hospitals, causing several deaths” showed a mean of 4.21. This indicated that the hospitals were aware of the significance of training courses related to natural disaster management. Statement 1 stated “Snowstorms often prevent the workers from arriving at the hospitals since the roads were often blocked” and was ranked last with a mean of 4.3 and high degree. This indicated that the hospitals were aware of the significance of effective communication channels between the employees and top management if there was an occurrence of a natural disaster. All the statements showed a mean of 4.23. Thus, the above results showed that the hospitals need to make full use of their workers and managers by providing them more training, helping them

develop their skills and experience since these factors could allow them to manage natural disasters and decrease their negative effects.

Table 3. Results for the Mean and Standard Deviation of the items related to the Natural Disaster variable in a descending order

No.	Statement	Mean	SD	Degree
1	Snowstorms that prevent workers from reaching the hospital due to the interruption of roads	4.3	0.72	High
2	Floods that hinder the movement of ambulances and transport patients on the roads to the hospital	4.26	0.79	High
3	Heavy thunderstorms that cause power outages for vital devices in the hospital, causing deaths among patients	4.21	0.78	High
Total rate		4.23	0.49	High

Source: author's work.

C. Strategic and operational risks

Table 4 presented the mean values derived from the questionnaire for the "Performance Orientation" variable, ranging between 4.2 and 4.36.

Table 4. Results for the Mean and Standard Deviation of the items related to the Strategic Risk variable in a descending order

No.	Statement	Mean	SD	Degree
1	The state of confusion that affects employees' performance of their duties in times of crisis	4.36	0.61	High
2	Lack of a backup program for all information and data	4.31	0.72	High
3	Lack/shortage of electric generators (including fuel and cooling water) in hospital	4.2	0.81	High
4	The lack of medical staff and the failure to absorb the large numbers of patients and clients	4.2	0.68	High
5	Lack of budget allocated for the purchase of medical supplies and medicines	4.18	0.74	High
6	Dependence on specific sources of supply of medical supplies and medicines – monopoly	4.18	0.74	High
7	Vinegar and malfunctions alarms in intensive care rooms and operations	4.3	0.78	High
8	Lack of protective equipment, resources and capabilities needed to preserve the "staff life" in times of crisis	4.15	0.87	High
Total rate		4.32	0.52	High

Source: author's work.

Statement 1 stated that “A confusing situation affected the employee performance in a crisis”, showed the highest average of 4.36. This highlighted that the hospitals were very interested in employing qualified and capable employees with suitable job characteristics to decrease the effect of disasters. The 4th statement, i.e., “A lack of medical staff and their failure to absorb the massive increase in the number of patients and auditors” showed a mean of 4.18. This score indicated that the hospitals were eager to review the actual operational performance of this strategy. All statements showed a mean value of 4.36.

D. The probability of crisis recurrence

Table 5 presents the average values for the “probability of crisis recurrence” variable ranging from 4.3 to 4.44. Statement 1, i.e., “repeated fires within the hospital premises irrespective of their cause” showed the highest mean of 4.44, thus indicating that the hospitals constantly monitored and reviewed the probability of crisis recurrence. Statement 5 stated, “The hospitals did not benefit from the primary crisis and corrected their operational and strategic course of action” and showed a mean of 4.3 with a high degree. This highlighted the hospitals’ eagerness in monitoring and decreased the crisis recurrence, thereby reducing its negative effects. All the statements showed a mean of 4.24. This value indicated that the hospitals were aware of their role in making the workers aware of the severity of the crisis and aiding in the crisis-recovery process.

Table 5. Results for the Mean and Standard Deviation of the items related to the Crisis recurrence variable in a descending order

No.	Statement	Mean	SD	Degree
1	Frequent fires inside the hospital regardless of the cause of the fire every time	4.44	0.70	High
2	The long-term effect of weather – cold and rain for a long time	4.41	0.72	High
3	The constant change in health technology systems makes the process of monitoring and constantly updating a recurrent crisis	4.41	0.72	High
4	The return of occupational strikes in the country from time to time	4.38	0.71	High
5	Not benefit from the first crisis and correcting the path of action strategically and operationally	4.30	0.76	High
Total rate		4.24	0.52	High

Source: author's work.

Part two: Paragraphs related to the Dependent Variables (Development of BCM)

Table 6 presents the average values for the hypothesis that “the hospitals identify many areas requiring development and change for improving their business continuity”, ranging between 4.11 and 4.59. Statement 1 stated that “fundamental changes were made for the business continuity plan” and showed the highest mean value of 4.59. This indicated that the private hospitals in Jordan aimed to positively affect their team and display their keenness regarding the continuity of their work. Statement 5, i.e., “hospitals used new computerised programs and updated their current BCM process”, showed the lowest mean value of 4.11, with a high degree. This showed that the hospitals aimed to simplify the complex systems and their work processes. All the statements showed a mean of 4.32. The above results indicated that the hospitals presented an environment that allowed development and changes for improving their BCM and improved the employees’ accountability.

Table 6. Results for the Mean and Standard Deviation of the items related to the BCM development in a descending order

No.	Statement	Mean	SD	Degree
1	Make drastic changes to the business continuity plan	4.59	0.56	High
2	Increased interest in testing the effectiveness of the plan developed through implementing the activities required in the plan	4.36	0.66	High
3	Implementing the new computerised software and updating the existing business continuity management	4.36	0.90	High
4	Pay close attention to cyber security and cyber risks	4.34	0.89	High
5	Application of modern technologies in information technology and cloud applications	4.11	0.73	High
6	Increased focus on crisis management	4.16	0.80	High
Total rate		4.32	0.61	High

Source: author’s work.

Part three: Hypotheses testing

- H1: No statistically significant impact of the internal crisis was noted on the development of BCM in private hospitals.
- H2: No statistically significant impact of the external crisis was noted on the development of BCM in private hospitals.
- H3: No statistically significant impact of natural disasters was noted on the development of BCM in private hospitals.

H4: No statistically significant impact of strategic and operational risks was noted on the development of BCM in private hospitals.

H5: No statistically significant impact of the recurrence of a crisis was noted on the development of BCM in private hospitals.

Table 7. Test Results of the study hypotheses

Hypothesis	T calculated	T-Tabulated	T-SIG	H0 conclusion	H1 conclusion
H1	18.88	1.9799	0.000	Rejected	Accepted
H2	4.88	1.9799	0.000	Rejected	Accepted
H3	4.1667	1.9799	0.000	Rejected	Accepted
H4	0.8312	2.0452	0.000	Rejected	Accepted
H5	4.349	2.0452	0.000	Rejected	Accepted

Source: author's work.

Table 8. Results of the Beta coefficient (β)

Factor	β coeff.	SE	B (standard coeff.)	T	SIG	Tolerance	VIF
Constant	0.894	0.235		3.804	0.000		
Cases and crises situation (internal and external)	0.020	0.069	0.027	0.281	0.779	0.478	2.093
Natural disasters	0.2853	0.074	0.308	3.407	0.001	0.523	1.913
Operational and strategic risks	0.162	0.058	0.228	2.785	0.007	0.641	1.560
Probability of crisis reoccurrence	0.306	0.093	0.314	3.302	0.001	0.306	0.093

Source: author's work.

The above results highlight the importance of the Beta coefficient in different areas that need development and changes for improving BCM in the Jordanian hospitals, thereby allowing the hospitals to decrease the negative effects of natural disasters.

In this study, the researchers have noted that the crises directly affect the development of the BCM in Jordanian hospitals. This highlighted the significance of the BCM in the success of the hospitals that wish to continue their operations in an emergency. A similar observation was made by Liu et al. (2018) and Fabeil et al. (2020). Furthermore, Blumenthal et al. (2020) stated that the health care institutes aimed to ensure that the medical services were prepared to offer medical treatment as a response to external man-made and natural disasters. Therefore, the hospital managers and decision-makers had to improve the BCM plans and processes and regularly update their pro-

cesses, since other global disasters like the COVID-19 pandemic could drastically affect their operations.

The results also indicated that the hospitals were keen to improve their stability and security after the occurrence of a crisis, which could help them understand how to fulfil their goals easily. The researchers noted that the hospitals offered an environment that was conducive for the development and changes made for business continuity. Thus, it was easier to improve and account for the various employees. The results showed that the hospitals often analysed their operational processes and trends to understand their existing abilities and competencies and detect developmental opportunities for fulfilling their goals and facing crises.

Conclusion

This study was carried out for understanding the effect of the crisis on the development of the BCM in the Jordanian hospitals and to determine the processes that were implemented by the hospitals for handling the various crises and disasters. Furthermore, the researchers made a few recommendations. They stated that the hospitals need to be more interested in offering training courses to their workers for improving their knowledge and helping them handle any disaster without affecting the workflow. This would help them separate the BCM planning from the various operational and emergency plans outlined by the management. Furthermore, they also need to review the BCM processes after every crisis.

Theoretical and practical contributions

This study has contributed to the existing knowledge regarding BCM in many ways. Firstly, it has added to the knowledge regarding the understanding of all factors that affect BCM development. Secondly, it has contributed to the literature related to health care crisis management by highlighting the need for further work. It is noted that very few researchers are interested in studying crisis management strategies in the health care sector. The researchers have also contributed to the understanding that crisis management in developing countries is a new topic, as a majority of the crisis management studies have been conducted in developed and Western countries. Additionally, this research has presented some steps that would help determine the effect of a crisis on the development of the BCM process.

Practically, the health care institutes have many responsibilities during their normal operations, which increase many-folds during a crisis. Hence, this study has made a few practical contributions, as the researchers have drawn managerial attention to improving the BCM processes.

Future research direction

This study was conducted in Jordan to determine the different techniques used by the Western and Asian healthcare systems to handle any crisis. In addition, the researchers have compared the operational processes implemented in Jordanian hospitals to those in developed countries. Thus, this study presents a quantitative research approach for determining the effect of a crisis on the development of BCM in Jordanian hospitals. In future, the researchers could implement different methodological processes that involve a large population sample and offer a better picture of the BCM process in the Jordanian hospitals. Here, the researchers primarily focused on the health care industry. However, in the future, the researchers could extend this methodology to other industries and countries for achieving more generalised results.

This study has shown that Jordan's crisis management and BCM development research is still developing. Hence, this study could be used by other researchers who wish to study this topic further in either the health care sector or other areas.

The contribution of the authors

The article was written in collaboration by all authors.

References

- Abo Murad, M., Al-Kharabsheh, A., & Al-Kharabsheh, A. (2021). Crisis management strategies in Jordanian hotel industry. *Journal of Environmental Management & Tourism*, 12(2), 578-587.
- Abo-Murad, M., & Abdullah, A. K. (2019). Turnover culture and crisis management: Insights from Malaysian hotel industry. *Academy Of Strategic Management Journal*, 18(2), 1-14.
- Abo-Murad, M., Abdullah, A. K., & Jamil, R. (2019). Effect of the organisational culture on crisis management in hotel industry: A qualitative exploration. *International Journal of Entrepreneurship*, 23(2).
- Abu Zayed, H. A. A. (2015). *Disaster management requirements and level of success in the Gaza strip: A case study of the ministry of interior's role in facing Alexa Flood in 2013 [Master of Business Administration Thesis]*. Gaza, Palestine: Islamic University.
- Al-Kharabsheh, A., Ahmad, Z. A., & Kharabsheh, A. (2014). Characteristics of crisis and decision making styles: The mediating role of leadership styles. *Procedia-Social and Behavioral Sciences*, 129, 282-288.
- Al-Kharabsheh, A. (2018). Impact of strategic planning on crisis management in the profit and non-profit sector in Jordan. *Academy of Strategic Management Journal*, 17(5).
- Al-Kharabsheh, A. A., Al-Bazaiah, S. A. I., Al-Kharabsheh, A. A., & Alheet, A. F. (2022). The strategic role of human resources management in performing crisis manage-

- ment: The mediating role of organizational culture and human capital during Covid-19 (An Applied Study on the Jordanian Ministry of Health). *Journal of Management Information and Decision Sciences*, 25(S1), 1-18.
- Al-Sahli, F. F. G. (2011). *The requirements of strategic planning and its role in disaster damage reduction [Master thesis]*. Riyadh, Saudi Arabia: Naif University for Security Sciences.
- Al-Serafi, M. (2008). *Crisis Management*. Horus Foundation for Publishing and Distribution, Alexandria.
- Ando, M., & Kimura F. (2012). How did the Japanese exports respond to two crises in the international production networks? The global financial crisis and the great east Japan earthquake. *Asian Economic Journal*, 26(3), 261-287.
- Azadegan, A., Syed, T. A., Blome, C., & Tajeddini, K. (2020). Supply chain involvement in business continuity management: Effects on reputational and operational damage containment from supply chain disruptions. *Supply Chain Management: An International Journal*, 25(6). <https://doi.org/10.1108/SCM-08-2019-0304>
- Bakar, Z. A., Yaacob, N. A., Udin, Z. M., Hanaysha, J. R., & Loon, L. K. (2019). Business continuity management implementation in the Malaysian public sector. *International Journal of Business and Technology Management*, 1(1), 18-27.
- Bhargava, R. (2012). *15 marketing trends in 2013 and how your business can use them*. Washington: Likeonomics.
- Blumenthal, D., Fowler, E. J., Abrams, M., & Collins, S. R. (2020). Covid-19 – Implications for the Health Care System. *The New England Journal of Medicine*, 383(15), 1483-1488. <https://doi.org/10.1056/NEJMs2021088>
- Born, C. T., Briggs, S. M., Ciraulo, D. L., Frykberg, E. R., Hammond, J. S., Hirshberg, A., Lhowe, D. W., & O'Neill, P. A. (2007). Disasters and mass casualties: I. General principles of response and management. *The Journal of the American Academy of Orthopaedic Surgeons*, 15(7), 388-396. <https://doi.org/10.5435/00124635-200707000-00004>
- British Standard Institute (BSI). (2012). *Business Continuity Management Standard (BS 25999)*. UK.
- Cheval, S. (2012). *Natural disasters*. South Carolina: Hazard Research Lab.
- Coombs, W. T. (2014). *Ongoing crisis communication: Planning, managing, and responding*. Sage Publications.
- Efstathiou, P. (2008). *Health crisis management and characteristics of the managers*. 5th Hellenic Conference on Quality of Healthcare Services, Athens, Greece.
- Fabeil, N. F., Pazim, K. H., & Langgat, J. (2020). The impact of Covid-19 pandemic crisis on micro-enterprises: entrepreneurs' perspective on business continuity and recovery strategy. *Journal of Economics and Business*, 3(2).
- FEPL. (2020). *Covid-19 – Synthèse Des Premières Estimations des Conséquences Économiques*. <https://www.Lesepl.Fr/2020/04/Covid-19-Synthese-Des-Premieres-Estimations-Desconsequences-Economiques/>
- Filipović, D., Krišto M., & Podrug N. (2018). Impact of crisis situations on development of business continuity management in Croatia. *Journal of Contemporary Management Issues*, 23(1), 99-122.
- Gallagher, M. (2003). *Business Continuity Management: How to protect your company from danger*. London: FT Prentice Hall.
- Geelen-Baass, B. N., & Johnstone, J. M. (2008). Building resiliency: Ensuring business continuity is on the health care agenda. *Australian Health Review*, 32(1), 161-173.

- Gupta, P., Prakash, S., & Jayaraman, U. (2010). *IT infrastructure and its management*. New Delhi: Tata McGraw Hill.
- Harwati, L. N. (2013). Leadership style for effective outcomes. *Asian J Manage Sci Edu*, 2(2), 170-181.
- Hendrickx, C., D'Hoker, S., Michiels, G., & Sabbe, M. B. (2016). Principles of hospital disaster management: An integrated and multidisciplinary approach. *B-ENT*, 12(26/2), 139-148.
- Herbane, B., Elliott, D., & Swartz, E. M. (2004). Business Continuity Management: Time for a strategic role? *Long Range Planning*, 37(5), 435-457.
- International Organization for Standardization. (2012). (ISO 22301:2012). http://www.Iso.Org/Iso/Catalogue_Detail?Csnumber=50038
- Jafar, E., & Taneja, U. (2017). Determinants of Business Continuity Management in hospitals. *Int. J. Critical Infrastructures*, 13(1), 57-69.
- Jaques, T. (2010). Reshaping crisis management: The challenge for organizational design. *Organization Development Journal*, 28(1), 9.
- Jordan University of Science and Technology. (2018). *Risk Management Plan and Response Procedures*.
- Kaji, A.H., & Lewis, R.J. (2006). Hospital Disaster Preparedness in Los Angeles County. *Acad Emerg Med.*, 13(11), 1198-1203.
- Kapucu, N., & Garayev, V. (2011). Collaborative Decision-Making in Emergency and Disaster Management. *International Journal of Public Administration*, 34(6), 366-375.
- Kato, M., & Charoenrat, T. (2018). Business Continuity Management of Small and Medium-Sized Enterprises: Evidence from Thailand. *International Journal of Disaster Risk Reduction*, 27, 577-587.
- Kim, L. L., & Amran, A. (2018). Factors Leading to The Adoption of Business Continuity Management (BCM) In Malaysia. *Global Business and Management Research*, 10(1), 179-196.
- Kindleberger, C. P., & Aliber, R. Z. (2005). *Najveće Svjetske Financijske Krize: Manije, Panike I Slomovi*. Zagreb: Masmedia.
- Komori, D., Nakamura, S., Kiguchi, M., Nishijima, A., Yamazaki, D., Suzuki, S., & Oki, T. (2012). Characteristics of The 2011 Chao Phraya River Flood in Central Thailand. *Hydrological Research Letters*, 6(0), 41-46.
- Lagadec, P., & Topper, B. (2012). How Crises Model the Modern World. *Journal Of Risk Analysis and Crisis Response*, 2, 21-33.
- Lindstrom, S. (2012). A Model to Explain a Business Contingency Process. *Disaster Prevention and Management*. 21(2), 269-281.
- Liu, B. F., Fowler, B. M., Roberts, H. A., & Herovic, E. (2018). Keeping Hospitals Operating During Disasters Through Crisis Communication Preparedness. *Public Relations Review*, 44(4), 585-597.
- OECD. (2020). *OECD Economic Outlook*. Interim Report September 2020, Paris: OECD Publishing. <https://Dx.Doi.Org/10.1787/34ffc900-En>
- Pearson, C. M., & Clair, J. A. (1998). Reframing Crisis Management. *Academy Of Management Review*, 23(1), 59-76.
- Ripley, H. (2015). The Importance of Business Continuity for The Healthcare Industry. Article Issued in *East Tennessee Medical News*. 6th June. <http://Easttnmedicalnews.Com/Content/Importance-Business-Continuity-Healthcare-Industry>

- Roux-Dufort, C. (2000). Why Organisations Don't Learn from Crises: The Perverse Power of Normalisation. *Review Of Business*, 21(3/4), 25-30.
- Sawalha, I. H. S. (2013). Organisational Performance and Business Continuity Management: A Theoretical Perspective and A Case Study. *Journal Of Business Continuity & Emergency Planning*, 6(4), 360-373.
- Tewodros Aragie Kebede, S. E. (2021). *Impact Of The COVID-19 Pandemic on Enterprises in Jordan*. Jordan: Fafo, ILO, UNDP.
- Wang, J., Ritchie, B. W., & Campiranon, K. (2015). The Influence of Organizational Culture on Crisis Planning: An Application of the Competing Values Framework (CVF) in Chinese Hotels. *Tourism Crisis and Disaster Management in the Asia-Pacific*, 44-61.
- 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*, 4(1), 62-68.