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RESEARCH TITLE

Impact of Business Intelligence on Crisis Management at some Banks: A Comparative Study between The Kingdom of Saudi Arabia and The Arab Republic of Egypt

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Abstract

This study examines the impact of Business Intelligence (BI) on Crisis Management within the banking sectors of the Kingdom of Saudi Arabia and the Arab Republic of Egypt. Utilizing a descriptive analytical approach, the research assesses how core BI dimensions—data processing, strategic techniques, competitive intelligence, and performance management—influence a bank's capacity to manage various crisis stages. Data was gathered via a questionnaire distributed to middle and upper management at selected banks. The statistical analysis reveals a significant positive relationship between integrated BI capabilities and effective crisis management in both nations. Notably, the adequacy of strategic techniques emerged as the most critical factor driving damage containment and institutional recovery. The study concludes that continuous investment in BI infrastructure is vital for enhancing banking resilience, predicting threats, and maintaining a sustainable competitive advantage

Key Words: Business Intelligence (BI); Crisis Management; Commercial Banks; Strategic Techniques Adequacy; Kingdom of Saudi Arabia (KSA); Arab Republic of Egypt.

عنوان البحث

أثر ذكاء الأعمال في إدارة الأزمات في بعض البنوك: دراسة مقارنة بين المملكة العربية السعودية وجمهورية مصر العربية

المستخلص

تتناول هذه الدراسة أثر ذكاء الأعمال (BI) في إدارة الأزمات داخل القطاع المصرفي في كلٍّ من المملكة العربية السعودية وجمهورية مصر العربية. وباستخدام المنهج الوصفي التحليلي، تسعى الدراسة إلى تقييم مدى تأثير الأبعاد الرئيسة لذكاء الأعمال، والمتمثلة في معالجة البيانات، والتقنيات الاستراتيجية، والذكاء التنافسي، وإدارة الأداء، في قدرة البنوك على إدارة المراحل المختلفة للأزمات. وقد جُمعت البيانات من خلال استبانة وُزعت على عينة من القيادات الإدارية الوسطى والعليا في عدد من البنوك المختارة. وأظهرت نتائج التحليل الإحصائي وجود علاقة إيجابية ذات دلالة إحصائية بين القدرات المتكاملة لذكاء الأعمال وفاعلية إدارة الأزمات في كلا البلدين. كما برزت كفاية التقنيات الاستراتيجية بوصفها العامل الأكثر أهمية في تعزيز احتواء الأضرار ودعم التعافي المؤسسي. وتخلص الدراسة إلى أن الاستثمار المستمر في البنية التحتية لذكاء الأعمال يُعد أمراً حيوياً لتعزيز مرونة القطاع المصرفي، والتنبؤ بالتهديدات، والمحافظة على ميزة تنافسية مستدامة.

الكلمات المفتاحية: ذكاء الأعمال(BI) ؛ إدارة الأزمات؛ البنوك التجارية؛ كفاية التقنيات الاستراتيجية؛ المملكة العربية السعودية؛ جمهورية مصر العربية.

Introduction

Business organizations are witnessing huge technological developments that have led to important changes in the nature of their work, where their success is closely linked to correcting information in a timely manner, especially with the continuously ongoing competition. Therefore, the concept of "business intelligence" has emerged, which is one of the modern management methods that aim to merge business and technology together to help business organizations continue their work, seize opportunities, and anticipate and confront the surrounding risks and threats to achieve a sustainable competitive advantage for the business organizations.

Business organizations are also exposed to crises due to the complexity of the environment surrounding them, which usually occurs accompanied by surprise and may lead to a turning point that affects the extent of the survival of business organizations. As such, business organizations are interested in business intelligence as a means to confront and manage crises.

Accordingly, business intelligence is considered one of the necessary basics that help in creating highly efficient responses to confront crises, overcome threats, invest in available opportunities, and boost business organizations' ability to respond to changes in the surrounding business environment, thus achieving success (Aljuhmani & Emeagwali, 2017; Mohammad, Al-Okaily, Al-Majali, and Masa'deh, 2022).

Furthermore, while previous studies have extensively explored Business Intelligence (BI) in western banking contexts, there remains a notable empirical gap in comparative research within the MENA region, particularly regarding the interplay between BI capabilities and crisis management stages. This study fills this gap by providing a unique cross-national analysis between the Saudi and Egyptian banking sectors, offering strategic insights tailored to these specific institutional frameworks.

Research Problem

Banks are exposed to fierce competition due to the similarity between the services they offer, the multiplicity of competition methods, and major changes in the surrounding environment. With technological development, banks often emphasize the importance of managing crises and seizing opportunities through the implementation of business intelligence. Accordingly, the research problem can be represented by the following main question: What is the level of business intelligence among bank employees? What is the level of crisis management at banks? What is the impact of business intelligence at banks on crisis management? From this main question, several sub-questions emerge, including: What is the impact of the combined business intelligence dimensions at banks on each of the business intelligence dimensions individually?

Research Objective

The main objective of the current research is to measure the impact of business intelligence on crisis management at some banks by achieving a number of sub-objectives that can be summarized as follows: identifying the level of business intelligence among employees at banks; determining the level of crisis management at banks; determining the impact of business intelligence at banks on crisis management; and identifying the impact of business intelligence at banks, with all underlying dimensions combined, on each dimension of business intelligence individually.

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Research Hypothesis

Based on the research problem and objectives, research hypotheses can be formulated as follows:

Main Hypothesis

There exists a statistically significant impact of the combined business intelligence dimensions on crisis management at some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia at a 0.05 level of significance.

Sub-Hypothesis

There is a statistically significant impact of the combined business intelligence dimensions on detecting warning signals at some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia.

There is a statistically significant impact of the combined business intelligence dimensions on the preparedness for crises at some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia.

There is a statistically significant impact of the combined business intelligence dimensions on damage containment (response) at some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia.

There is a statistically significant impact of the combined business intelligence dimensions on learning from crises at some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia.

There exists a statistically significant impact of the combined business intelligence dimensions on the recovery of activity at some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia.

Research Boundaries/Limits

Spatial Boundaries: Some banks at The Arab Republic of Egypt (Greater Cairo), namely the National Bank of Egypt, Misr Bank (Banque Misr), and Qatar National Bank, besides some banks at The Kingdom of Saudi Arabia (Mahayel City, Asir Province), namely Al Rajhi Bank, Bank of Al Bilad, Riyad Bank, and Saudi National Bank.

Time Span: The time span devoted to completing the research is approximately three months.

Human Limits: upper and middle-administrative-level employees working at the mentioned banks.

"These specific banks were selected due to their systemic importance, significant market share, and leading role in digital transformation within both KSA and Egypt. Focusing on these major institutions ensures that the data reflects the most advanced business intelligence practices in the MENA region."

Research Methodology

The researchers applied the descriptive analysis approach to primary data collected using a questionnaire that was designed to achieve the research objectives through analyzing the collected data and testing the hypotheses. Frequencies and percentages were calculated to describe the demographic variables, and the Cronbach's alpha coefficient test was applied to measure the stability of the questionnaire items. "To ensure the suitability of the research instrument for cross-national comparison, reliability and validity analyses were conducted separately for both the Saudi and Egyptian datasets. The Cronbach's alpha coefficients for all

dimensions in both sub-samples exceeded the acceptable threshold of 0.70, confirming the high internal consistency and stability of the questionnaire across different institutional environments. The arithmetic mean and standard deviation were also used to determine the relative importance of the research variables and related paragraphs.

Level of research variables = {maximum limit of the alternative (strongly agree=5) - minimum limit of the alternative (strongly disagree=1)} ÷ number of levels (high, medium, low) = {5-1} ÷ 3 = 1.33. Hence, the low-level ranges from 1 to less than 2.33; the average level ranges from 2.33 to less than 3.66; and the high-level equals to or is greater than 3.67.

To test the research hypotheses, the Multiple Regression Analysis approach was applied to illustrate the impact of more than one independent variable on one dependent variable. The variance inflation factor (VIF) and the tolerance test were also obtained for each of the research variables, taking into account that the permissible variance inflation factor does not exceed 10 and that the tolerance value is greater than 0.05 to ensure that no multicollinearity exists between the independent variables.

Sources of data

In order to achieve the research objectives and test the hypotheses, two sources were used to collect the required data: secondary and primary. ***Secondary*** *data were collected from Arabic and foreign references and previous literature, while* ***primary*** *data were collected with the help of a questionnaire that was designed to include statements reflecting the research objectives. A Likert 5-point scale was used to rate responses collected from the surveyed sample individuals.*

Theoretical Framework

The theoretical framework presents definitions of the concepts of research variables:

Business intelligence is an advanced information system that seeks to benefit from all the technological and organizational capabilities of advanced information and applications. It includes all applications, activities and techniques necessary to collect data from various sources, as well as organize, arrange, classify and store such data in a database in an easily accessible way to extract and store information concerning the organization's activities, thereafter process and present them in reports so that the results of applying such techniques can be used to improve the operations carried out by the business organization to provide decision makers with the information required at both the strategic and tactical levels to understand, manage and coordinate operations in the business organizations, which supports the practical and strategic decision-making process (Radmehr & Bazmara 2017), (Mariani, 2018), (Guarda, 2012), (Rouhani, 2016). Dimensions of business intelligence include collecting, analyzing, storing, and processing data; the adequacy of strategic techniques; competitive intelligence; and business performance management, as follows:

- Collecting, Analyzing, Storing, and Processing Data**:** *the process of collecting data from various sources, extracting data, analyzing it, and displaying or presenting such extracted and analyzed data with the aim of improving the decision-making process through basing it on information and knowledge is considered the first stage of the business intelligence process (Alshawabkeh, 2023).*
- Adequacy of Strategic Techniques: *This refers to the various forms of modern techniques used, including data management, systems interaction and integration with other systems, and visualization techniques, in addition to advanced business intelligence techniques and employing them to achieve a specific goal. It can also be expressed as the set of strategic skills possessed by the organization's management*

that enable them to manage their operations at a certain level of mastery and accuracy (Olszak, 2014; Ahmed & Sayed, 2021).

- Competitive Intelligence: *This is a systematic process that consists of several activities, including the identification of all the organization's needs to achieve competitive intelligence. Subsequently, data required from the external environment is collected, analyzed, classified, and published in the external environment and delivered to decision-makers in order to achieve the organization's goals. It is also known as the process of collecting, processing, and disseminating information for the purposes of reducing the state of uncertainty in making all strategic decisions. It is also the process of planning mechanisms for obtaining information related to the internal and external environments within an ethical and legal framework, then analyzing and processing such information in a way that helps in making decisions capable of achieving the targeted competitive advantage (Nithya & Kiruthika, 2021).*
- Business Performance Management: *It is considered the basic framework for organizing and analyzing all business methodologies, processes, and related systems to direct and guide the overall performance of the organization and thus translate the objectives and crystallize them in the framework of plans valid for implementation. This perspective evaluates the degree of the management's success and the extent of its ability to meet the requirements of the organization's stakeholders. It measures the degree of employees' skills and the way services are provided and offered. It also represents the organization's ability to achieve its market-oriented objectives. Besides, it enables controlling the organization's performance and measuring it against approved key performance indicators (Owusu, 2017; Radmehr & Bazmara, 2017; Husseini, 2017; Nithya & Kiruthika, 2021).*
- Crisis management: *is the method of dealing with a crisis through systematic administrative processes designed to confront crises before and after their occurrence and try to predict and prevent them by providing skills while planning and implementing them, making correct and appropriate decisions based on available information, and building an effective communication system that helps achieve the organization's goals. It also refers to the process of pre-planning for an unexpected negative event to limit its negative impacts on the organization by developing new strategies, or a set of scenarios, and proposing appropriate solutions for each of them. The importance of crisis management lies in preventing crises by eliminating their causes, with the ability to identify the sources of threat, predict risks, make optimal investments in resources, and minimize harmful effects, in addition to its importance in immediate dealing with events and quick rebuilding of organizations at low costs (Owusu, 2017), (Pang, Jin, & CAMERON, 2010), and (Alhussein, Ghnaim, & Abu Albasal, 2020). Crisis management dimensions include detecting warning signals, preparedness for crises, damage containment (response), learning from crises, and recovery of activity,* ***as follows****:*
- Detecting Warning Signals: *This involves monitoring and analyzing the warning signals that confirm crisis incidence. It is a group of elements that can reflect the level of the management's ability to identify the signs and symptoms that indicate crisis incidence (Altıok, 2011).*
- Preparedness for Crises: *This means all the administrative processes and scientific techniques that enable the organization to prepare for crisis prevention, whereby plans and scenarios are developed to anticipate potential and unexpected crises and plan for crises that cannot be evaded so as to control or mitigate their impacts as much as*

possible. The ultimate goal is to discover weaknesses in the organization's protection system (Altıok, 2011; Al-Khrabsheh, Al-Bazaiah, Al-Khrabsheh, & Alheet, 2022).

- Damage Containment (Response): *this is where all the means and methods are prepared to reduce and limit the damage and losses and prevent their spread to the rest of the organization, which depends on the nature of the incident that has occurred (Al-Khrabsheh, Al-Bazaiah, Al-Khrabsheh & Alheet, 2022) (Pang, Jin & CAMERON, 2010).*
- *Learning from crises is where all the events are retrieved, studied, and analyzed, and lessons learned are extracted, whether from the organization's experience or from the experiences of other organizations. Based on experiences, the learning process takes place, and the organization's future capabilities are improved (Al-Khrabsheh, Al-Bazaiah, Al-Khrabsheh & Alheet, 2022) (Pang, Jin & CAMERON, 2010).*
- Restoring Activity (Recovery): *At this stage, short- or long-term programs are prepared and implemented, which are selected in advance to restore or recover the organization's activity and should not only focus on internal operations and ignore the impact of the crisis on external parties (Al-Khrabsheh, Al-Bazaiah, Al-Khrabsheh & Alheet, 2022) (Pang, Jin & CAMERON, 2010).*

Review of Literature

- *This part presents a number of previous studies related to the research subject, arranged in ascending chronological order, from earliest to latest.*
- *The study that was conducted by Aghaei and Asadollah (2013) to investigate the relationship between business intelligence systems and strategic decision support systems revealed that business intelligence can improve strategic decisions and can have significant positive impacts on aspects of strategic decisions such as efficiency, effectiveness, agility, flexibility, and integration.*
- *Another study that was conducted by Vaidya, Ahirrao, Kadam, and Lugade (2014) described the business intelligence system program for banking and financial services, where many companies develop an information technology strategy that includes using the business intelligence programs in the decision-making process to achieve a strong return on investment in this type of program. The company should have at least 10 years of detailed data on sales, purchases, employees' costs, and other elements that affect the total cost of providing a service or good, which serves the purpose of creating reports that show trends, identify the successes and failures of a product, and provide a more comprehensive view of the company's activity.*
- *The article that was published by Taneja (2014) is considered an attempt to explore ways in which business intelligence can provide useful information to the banking industry through exploring the nature of consumer transactions and dealings and can help the banking industry foster a strong and long-term relationship with customers and bring happiness to them. In other words, the banking system can utilize available resources with the help of the business intelligence system to provide effective and ready-for-action information to achieve customers' happiness.*
- *The study that was conducted by Preko and Kester (2015) revealed that those who have adopted business intelligence methods enjoy full advantage and dominance in the market, as the competitive advantage of today's companies depends on their ability to process data in a timely manner to make informed decisions in developing strategies in order to achieve competitive advantage in the global market. Such data can be*

available in data centers or be distributed across geographic regions on local servers. It seems that most organizations with data warehouses benefit from applying data mining techniques to analyze data so as to extract information that helps align companies to achieve their goals.

- *The paper that was published by Moro, Cortez, and Rita (2015) analyzed recent research literature on trends in business intelligence (BI) applications in the banking industry based on 219 articles that were published between 2002 and 2013. Results showed that credit in banking is clearly the main direction of application, especially for risk prediction that supports credit approval or rejection decisions. There is also a related interest in bankruptcy and fraud prediction. Customer retention appears to be related, albeit weakly, to targeting and justifying banking offers to reduce churn. In addition, a large number of articles focused more on BI techniques and their applications, using the banking industry only for evaluation, and therefore did not praise the benefits of the banking business explicitly.*
- *The paper published by Kaur (2016) stressed the importance of business intelligence (BI) in the field of electronic banking services and attempted to discover the problems that banks face while implementing business intelligence in their banking systems, where business intelligence is used to analyze business data that supports the flow of business information around and within the organization. By identifying, processing, and transforming information into useful management knowledge and intelligence, banks can use business intelligence to analyze the performance budget, historic trends, overall performance, measure employees' performance, etc.*
- *The paper published by Ouda (2016) is considered an attempt to model the Economy Bank for Investment and Finance (EBIF) through business intelligence techniques to correctly identify opportunities and trends in financial businesses. The business intelligence system, developed on Microsoft SQL Server 2008 R2, was proposed for an economic investment and finance bank based on information available to the company. EBIF's business intelligence system has been used to accomplish complex processing and analysis of data. This was a result of market dynamism, intense competition, changing customer requirements, and the need for strict control and risk management. Factors such as mergers and acquisitions, deregulation, technological innovation, and competition have forced financial companies to rethink their businesses. Business intelligence (BI) solutions for financial companies provide decision-makers with the ability to manage and benefit from information sources in solving problems and making high-quality and timely decisions. Using business intelligence in the financial services industry helps financial companies create a vision for financial managers, train the organization to set realistic goals, and support optimal decision-making. Business intelligence covers many areas of the financial services industry, the most important of which are relationship marketing, performance management (PM), risk management (RM), asset and liability management (ALM), and compliance. Data warehouses (DW) and online analytical processes (OLAP) are considered the informational basis for business intelligence applications. Data mining (DM) is an important part of business intelligence that deals with complex statistical analysis, discovering hidden relationships between data, and predicting behavioral trends in business systems.*
- *The article that was published by Kakhki and Palvia (2016) discussed the relationship between the extent of applying business intelligence and analytics (BI&A) and business performance. It also analyzed the moderate role of technology in this relationship. The*

data required for running the model was collected from secondary sources, including 116 public companies in the United States. The collected data were then analyzed using structural equation modeling techniques. The results obtained revealed a positive relationship between the extent of BI&A implementation and business performance. Results showed that the type of implemented BI&A has a significantly moderate effect on the relationship between the implementation of BI&A and business performance.

- *A paper that was published by Rouhani, Ashrafi, Ravasan, and Afshari (2016) aimed to study the relationship between business intelligence functions, decision support benefits, and organizational benefits in the context of the decision environment (design, methodology, and approach). Results confirmed a significant relationship between BI functions, decision support benefits, and organizational benefits. Results also provided effective and useful insights for investors and business owners to use the most appropriate business intelligence tools and functions to realize more optimal organizational advantages. It also enables managers to better understand the application of business intelligence functions in the process of achieving the specified management support benefits.*
- *The study that was conducted by Gauzelin and Bentz (2017) to address the impact of business intelligence systems on organizational decision-making and performance found that, when business intelligence systems are deployed in small and medium enterprises (SMEs), they facilitate the process of timely decision-making, improve organizational efficiency, enable the company to adequately meet customer needs, and lead to more satisfied employees.*
- *The study that was conducted by Owusu (2017) with the aim of empirically evaluating the impacts of adopting business intelligence systems on the organizational performance of banks developed a conceptual model using the Balanced Scorecard (BSC). Results revealed that business intelligence systems do indeed have a significant positive impact on learning, growth, internal operations, and customer performance at banks. The achieved results proved that adoption of business intelligence systems does not directly lead to boosting the financial performance of banks but rather through the indirect impacts of learning, growth, internal processes, and customer performance, thus confirming the basic hypothesis of the balanced scorecard.*
- *Results of the structural equation modeling in the research conducted by Bhatiasevi and Naglis (2020) showed that compatibility, technology readiness, top management support, and competitive pressure created a positive attitude towards the adoption of BI, where the adoption of business intelligence resulted in a positive impact on the internal process, learning, and growth in terms of organizational performance.*
- *The study was conducted by Nithya and Kiruthika (2021) in an attempt to create a conceptual framework to measure the impact of adopting business intelligence on banks' performance in order to add value to the current views on business intelligence adoption (BIA). A literature review approach was implemented to identify the specific gap that exists in BIA. The study inserted customers' relationship management as a moderating variable in the proposed framework. This would enhance BIA's focus on the relationship with all the included variables, which would enable the bank to develop policies based on the specific relationship between the study variables. The literature related to all variables was evaluated, and the research gap was identified, which paved the way for conceptualizing a model that can be used in the future to measure the impact of BIA on banks' performance within the scope of customer*

relationship management. This study will serve as an initial preparatory tool to develop a model for evaluating and measuring the impact of BIA on banks' performance in the future.

- *Results of the paper that was published by Ji and Tia (2022), in which they studied the impact of blockchain on the "information technology" dimension, the "administrative employees" dimension, the "customers" dimension, and the "competitors" dimension, showed that the security, fraud reduction, and privacy of the blockchain factor have a noticeable and positive impact on all the efficiency aspects of business intelligence, specifically IT, employees, competitors, and customers. Also, equal and anonymous access to the blockchain factor showed a positive and significant impact on all the efficiency aspects of business intelligence, and the decentralization and sustainability of the blockchain factors have an impact on the efficiency of business intelligence. Besides, as a fourth factor, accountability and transparency of the blockchain have positive and significant impacts on all efficiency aspects of business intelligence. Moreover, the quality, speed, and efficiency of blockchain have positive and significant impacts on the IT dimension, as well as on the employees and customers' dimensions, but have no impact on the competitors' dimension.*
- *Results of the study that was conducted by Mohammad, Al-Okaily, Al-Majali, and Masa'deh (2022) to identify those factors that influence the use of business intelligence and analytics (BIA) in the banking sector revealed a critical impact, not only due to the presence of data and technology infrastructure but also due to the importance and availability of support and capabilities from management and human resources. Most importantly, successful business intelligence and analytics planning must go beyond the technological aspects to capture the full benefits of this technology, especially in the banking sector.*
- *A study that was conducted by Alshawabkeh (2023) to investigate the impact of business intelligence capabilities on strategic flexibility concluded that business intelligence capabilities have a positive impact on strategic flexibility. It also showed that BI structure and BI technology, as dimensions of BI capabilities, have a positive impact on strategic flexibility, while BI culture has no impact on strategic flexibility. Accordingly, the study recommended that managers use technology to discover the business environment and search for organizational methods that enable integration between the culture of business intelligence and employees' beliefs and values.*
- *The study conducted by Rahman (2023) found that business intelligence is positively related to operational efficiency and profitability. The study revealed that operational efficiency through business intelligence positively affects the bank's profitability. Based on the theory of competitive advantage, it also indicated that business intelligence allows a production entity to achieve higher profit margins compared to other competitors in the market. Thus, banks can offer better options at a lower cost than their competitors, thus ensuring a competitive advantage. Furthermore, based on the theory of resource-based view of strategy (RBV), the study argued that, as a strategic resource, business intelligence can provide the basis for developing bank capabilities, which can lead to superior performance over time. Therefore, the study recommended the application of business intelligence in banking companies as it helps in effective decision-making for bank management bodies, academics, and policymakers.*

Results and discussion

Demographic and Functional Characteristics of the Research Sample: *Results presented in Table 1 show that 63.33% and 77.78% of the sample individuals are males from Egypt and Saudi Arabia, respectively, and that 63.33% and 71.11% of the sample individuals from Egypt and Saudi Arabia are aged between 31 and 40 years, respectively. Results also indicate that 60.0% and 64.44% of the sample individuals from Egypt and Saudi Arabia hold the academic degree "bachelor," respectively. It can also be noticed that 36.67% and 40.0% of the sample individuals from Egypt and Saudi Arabia have experiences ranging between 11 and 15 years, respectively. Besides, 83.33% and 77.78% of the sample individuals from Egypt and Saudi Arabia belong to the middle management level, respectively.*

Table 1: *Distribution of members of the research sample according to demographic and functional characteristics.*

Variable	Category	Egypt		Saudi Arabia	
		frequency	(%)	frequency	(%)
Gender	male	19	63.33	35	77.78
	female	11	36.67	10	22.22
Age	30years and less	6	20.00	5	11.11
	from 31 to 40	19	63.33	32	71.11
	from 41 to 50	4	13.33	7	15.56
	from 51 and over	1	3.33	1	2.22
Qualification	Less than a Bachelor degree	7	23.33	10	22.22
	Bachelor	18	60.00	29	64.44
	Master	5	16.67	5	11.11
	Ph.D	0	0.00	1	2.22
Experience	from 5 years and less	6	20.00	6	13.33
	from 6 to 10 years	7	23.33	9	20.00
	from 11 to 15 years	11	36.67	18	40.00
	More than 15 years	6	20.00	12	26.67
Administrative level	Middle management	25	83.33	35	77.78
	Senior management	5	16.67	10	22.22
Total		30	100	45	100

Source: by the researcher from the results of the questionnaire.

Questionnaire Reliability: *Cronbach's alpha, developed by Lee Cronbach in 1951, is a coefficient used to assess reliability or internal consistency. The basic rule for interpreting Cronbach's alpha for Likert scale questions is that: If it yields a value greater than or equal to 0.9, then the measurement is excellent; if it yields a value greater than or equal to 0.8 and less than 0.9, then the measurement is good; if it yields a value greater than or equal to 0.7 and less than 0.8, then the measurement is acceptable; if it yields a value greater than or equal to 0.6 and less than 0.7, then the measurement is questionable; if it yields a value greater than or equal to 0.5 and less than 0.6, then the measurement is weak; and finally, if it yields a value less than 0.5, then the measurement is unacceptable (Kisbu-Sakarya, MacKinnon & Aiken, 2013), (https://blog.ajsrp.com). On the other hand, the results presented in Table 2 show that the calculated reliability values for the research variables indicate a high reliability coefficient and thus verify their ability to achieve the research objectives.*

Table 2: *Reliability coefficient and internal consistency of questionnaire dimensions (Cronbach's alpha).*

*V*ariable		Number of paragraphs	Egypt	Saudi Arabia
Business intelligence		16	0.904	0.909
1	*collecting, analyzing, storing and processing data*	4	03 0.7	0.744
2	Adequacy of strategic techniques	4	0.747	0.707
3	Competitive intelligence	4	0.833	0.793
4	Business performance management	4	0.831	0.839
Crisis Management		20	0.940	0.947
1	*detecting warning signals*	4	0.797	0.804
2	*preparedness for crises*	4	0.822	0.843
3	Damage containment (response)	4	56 0.7	0.771
4	Learning from crises	4	0.865	0.871
5	Restor*ing* activity	4	0.800	0.807

Source: *prepared by the researcher from the results of the questionnaire.*

Means and their Levels

Business Intelligence: *It is clear from Table (3) that sample individuals' answers to statements concerning the "collecting, analyzing, storing, and processing data" dimension fell in the range of 4.433–4.633, averaging 4.558, indicating a high level, based on which data processing operations to obtain reports to facilitate the decision-making process ranked first for Egyptian banks. It can also be noted that the value of the standard deviation is low, indicating convergence of the sample individuals' views regarding this dimension. For Saudi banks, sample individuals' answers to the same statements fell in the range of 4.600–4.689, averaging 4.656, indicating a high level, based on which data collection ranked first for Saudi banks too, which complies with the bank's plan designed to serve its objectives. It can also be noted that the value of the standard deviation is low, indicating convergence of the sample individuals' views regarding this dimension at Saudi banks.*

Table 3: *mean, standard deviation, and level of business intelligence dimensions in some Egyptian and Saudi Arabian banks.*

	Dimensions	Egypt				Saudi Arabia			
		mean	standard deviation	Ranking	level	mean	st. deviation	*Ranking*	level
collecting, analyzing, storing and processing data: The bank does									
1	By collecting data in accordance with the bank's plan established .to serve its objectives	4.600	0.498	2	high	4.689	0.468	1	high
2	Using appropriate modern technologies to collect, analyze .and process data	4.567	0.504	3	high	4.667	0.477	2	high
3	Data processing operations to obtain reports that facilitate the	4.633	0.490	1	high	4.667	0.477	3	high

	.decision-making process								
4	By maintaining databases in a secure manner that can be easily .referenced	4.433	0.728	4	high	4.600	0.580	4	high
Average		4.558			high	4.656	-	-	high
Adequacy of strategic techniques: The bank emphasizes on									
1	The importance of integrating scientific knowledge into the .data framework	4.567	0.626	3	high	4.578	0.690	3	high
2	The importance of using modern technology programs in .cooperation between workers	4.600	0.621	2	high	4.667	0.564	2	high
3	The importance of using modern technology programs in managing and implementing .work efficiently	4.633	0.615	1	high	4.711	0.549	1	high
4	The importance of constantly developing hardware and software for information systems	4.400	0.724	4	high	4.533	0.625	4	high
Average		4.550			high	4.622	-	-	high
Competitive intelligence: The bank emphasizes on									
1	The importance of attracting .distinguished talents	4.633	0.490	1	high	4.644	0.484	1	high
2	The importance of collecting information to detect any .potential competitors	4.500	0.572	2	high	4.600	0.688	2	high
3	The importance of predicting .competitors' strategies	4.267	0.691	4	high	4.511	0.626	4	high
4	The importance of benefiting .from competitors' experiences	4.500	0.682	3	high	4.556	0.624	3	high
Average		4.475			high	4.578	-	-	high
Business Performance Management: The Bank emphasizes on									
1	The importance of monitoring performance in order to achieve .a clear vision	4.467	0.629	2	high	4.622	0.576	1	high
2	The importance of compatibility .among the goals to be achieved	4.533	0.571	1	high	4.600	0.539	2	high
3	The importance of making .proactive decisions	4.200	0.761	4	high	4.422	0.723	4	high
4	The importance of employee participation in decision-.making	4.433	0.568	3	high	4.556	0.546	3	high
Average		4.408			high	4.550	-	-	high

Source: *prepared by the researcher from the results of the questionnaire.*

Sample individuals' answers to statements concerning the "adequacy of strategic techniques" dimension fell in the range of 4.400–4.633, averaging 4.550, indicating a high level, based on which the importance of using modern technology programs in managing and implementing work efficiently ranked first for Egyptian banks. It is also clear that the value of the standard deviation is low, indicating convergence of the sample individuals' views regarding this dimension. For Saudi banks, sample individuals' answers to the same statements fell in the range of 4.533 to 4.711, averaging 4.662, indicating a high level. It is worth mentioning that the importance of using modern technology programs in managing and implementing work efficiently ranked first for Saudi banks too. It can also be noted that the value of the standard deviation is low, indicating convergence of the sample individuals' views regarding this dimension for Saudi banks.

Likewise, sample individuals' answers to statements concerning the "competitive intelligence" dimension fell in the range of 4.267–4.633, averaging 4.475, indicating a high level, based on which the importance of attracting distinguished skills ranked first for Egyptian banks. It is also clear that the value of the standard deviation is low, indicating convergence of the sample individuals' views regarding this dimension. For Saudi banks, sample individuals' answers to the same statements fell in the range of 4.511–4.644, averaging 4.578, indicating a high level, based on which the importance of attracting distinguished skills ranked first for Saudi banks. It can also be noted that the value of the standard deviation is low, indicating convergence of the sample individuals' views regarding this dimension.

Sample individuals' answers to statements concerning "business performance management" ranged from 4.200 to 4.533, averaging 4.408, indicating a high level, based on which the importance of the existence of compatibility among the goals to be achieved ranked first for Egyptian banks. It can also be noted that the value of the standard deviation is low, indicating convergence of the sample individuals' views regarding this dimension. For Saudi banks, sample individuals' answers to the same statements fell in the range of 4.422–4.622, averaging 4.550, indicating a high level, based on which the importance of monitoring performance to achieve a clear vision ranked first for Saudi banks too. It is also clear that the value of the standard deviation is low, indicating convergence of the sample individuals' views regarding this dimension.

Crisis Management: *Results presented in Table 4 show that sample individuals' answers to statements concerning the dimension "detecting warning signals" fell in the range of 4.367–4.567, averaging 4.450, indicating a high level, based on which the importance of dealing with crises through analyzing the indicators of their incidence ranked first for Egyptian banks. It is also clear that the value of the standard deviation is low, indicating convergence of the sample individuals' views concerning this dimension. For Saudi banks, sample individuals' answers to the same statements fell in the range of 4.533–4.689, averaging 4.600, indicating a high level, based on which the importance of conducting a periodic survey to identify the possibility of crisis incidence ranked first for Saudi banks too. It can also be noted that the value of the standard deviation is low, indicating convergence of the sample individuals' views regarding this dimension.*

Table 4: *mean, standard deviation, and level of crisis management dimensions in some Egyptian and Saudi Arabian banks.*

	Dimensions	Egypt				Saudi Arabia			
		mean	*St. Dev*	*Ranking*	level	mean	*St. Dev*	*Ranking*	level
detecting warning signals: the bank confirms									
1	The importance of early warning .indicators before crises occur	4.400	0.724	3	high	4.533	0.757	4	high
2	The importance of scanning the external environment to avoid .crises	4.367	0.615	4	high	4.578	0.583	3	high
3	The importance of conducting periodic surveys to identify the .possibility of crises occurring	4.467	0.571	2	high	4.689	0.468	1	high
4	The importance of dealing with crises by analyzing the indicators .of their occurrence	4.567	0.504	1	high	4.600	0.495	2	high
Average		4.450			high	4.600	-	-	high
preparedness for crises: The bank emphasizes *on*									
1	The importance of setting .preventive rules to prevent crises	4.467	0.629	1	high	4.600	0.539	3	high
2	The importance of taking proactive measures to avoid .crises	4.400	0.563	3	high	4.667	0.522	1	high
3	The importance of providing training programs to deal with .crises	4.367	0.615	4	high	4.533	0.588	4	high
4	The importance of providing ready-made plans and programs .for crisis management	4.467	0.629	2	high	4.644	0.609	2	high
Average		4.425			high	4.611	-	-	high
Damage containment (response)*:* The bank confirms									
1	The importance of providing plans and programs for crisis .management	4.500	0.682	2	high	4.644	0.645	2	high
2	The importance of controlling crises at the beginning of their .occurrence	4.667	0.479	1	high	4.733	0.495	1	high
3	The importance of dealing with crises in a manner consistent with .their nature	4.433	0.728	4	high	4.600	0.580	4	high
4	The importance of reducing the .effects of crises	4.500	0.572	3	high	4.622	0.576	3	high
Average		4.525			high	4.650	-	-	high
Learning from crises: The Bank emphasizes *on*									
1	The importance of developing training plans and programs that .are implemented	4.567	0.504	3	high	4.667	0.522	2	high

2	The importance of drawing lessons from the crises .experienced by other banks	4.600	0.498	1	high	4.667	0.477	3	high
3	The importance of learning from crises and establishing controls to prevent their recurrence in the .future	4.567	0.504	4	high	4.667	0.477	4	high
4	The importance of benefiting from the experiences of the bank .and other banks in the future	4.600	0.563	2	high	4.756	0.435	1	high
Average		4.583			high	4.689	-	-	high
Restor*ing* activity *:* The bank confirms									
1	The importance of taking all measures to mitigate the effects .of crises	4.467	0.730	3	high	4.600	0.654	2	high
2	The importance of supporting departments affected by crises with the necessary resources to .restore their balance and activity	4.567	0.504	2	high	4.600	0.495	3	high
3	The importance of providing the latest technologies to be able to restore activity as quickly as .possible	4.467	0.730	4	high	4.556	0.693	4	high
4	The importance of taking the necessary measures to continue .practicing normal activities	4.600	0.675	1	high	4.622	0.684	1	high
Average		4.525			high	4.594	-	-	high

Source: *prepared by the researcher from the results of the questionnaire.*

Sample individuals' answers to statements concerning the dimension "preparedness for crises" fell in the range of 4.367–4.467, averaging 4.425, indicating a high level, based on which the importance of setting preventive rules to prevent the occurrence of crises ranked first for Egyptian banks. It is also noted that the value of the standard deviation is low, indicating the convergence of sample individuals' views regarding this dimension. For Saudi banks, sample individuals' answers to the same statements fell in the range of 4.533–4.667, averaging 4.611, indicating a high level, based on which the importance of taking preventive measures to evade the occurrence of crises ranked first for Saudi banks too. It can also be noted that the value of the standard deviation is low, indicating convergence of the sample individuals' views regarding this dimension.

Table (5): *VIF inflation test results and Tolerance.*

	Independent variables	Egypt		Saudi Arabia	
		VIF Variance inflation factor	Tolerance	VIF Variance inflation factor	Tolerance
1	collecting, analyzing, storing and processing data	1.415	0.707	1.252	1.252
2	Adequacy of strategic techniques	1.884	0.531	2.435	2.435
3	Competitive intelligence	1.754	0.570	3.300	3.300
4	Business performance management	1.670	0.599	2.001	2.001

Source: *prepared by the researcher from the results of questionnaire*.

"To test this hypothesis, multiple regression analysis was applied. Prior to interpreting the results, the structural integrity of the regression model was rigorously verified through Multicollinearity testing; all calculated Variance Inflation Factor (VIF) values were found to be strictly below the conservative threshold of 5, while Tolerance values remained significantly above 0.05. This mathematically confirms that the dimensions of Business Intelligence operate without severe statistical overlap, thereby validating the stability and reliability of the following results.

It is clear from the results presented in Table (6) that the adjusted coefficient of determination reached 0.510, reflecting a net level of interest in the combined business intelligence dimensions after eliminating the standard error values resulting from crisis management. It also reveals that there exists an impact of the combined business intelligence dimensions on crisis management in some banks in The Arab Republic of Egypt (at a 0.05 level of significance), as evidenced by the calculated F value that reached 8.56. Analysis results showed statistical significance for the dimension "adequacy of strategic techniques" as evidenced by the calculated T value that amounted to 3.71. The calculated value of the impact factor reached 0.610, meaning that a unit increase in the level of interest in this dimension (adequacy of strategic techniques in business intelligence) shall lead to increasing crisis management by a value of 0.610, thus the main hypothesis is confirmed. For some banks in The Kingdom of Saudi Arabia, the adjusted coefficient of determination reached 0.480, reflecting a net level of interest in the combined business intelligence dimensions after eliminating the standard error values resulting from crisis management."

Table (6): *Results of the multiple regression analysis of the effect of business intelligence on crisis management in some Egyptian and Saudi banks.*

Dependent variables	Independent variables	Egypt						Saudi Arabia					
		degree the influence	*T* Calculated	*Sig.*	*R 2*	*F* Calculated	*Sig.*	degree the influence	*t* Calculated	*Sig.*	*R 2*	*F* Calculated	*Sig.*
Crisis Management	Constant	1.379	1.771	0.089	0.510	8.560	0.000	1.342	2.030	0.049	0.480	11.163	0.000
	collecting, analyzing, storing and processing data	-0.110	-0.660	0.515				0.035	0.263	0.794			
	Adequacy of strategic techniques	0.610	3.710	0.001				0.425	2.773	0.008			
	Competitive intelligence	-0.096	-0.626	0.537				0.162	0.969	0.339			
	Business performance management	0.292	1.963	0.061				0.101	0.804	0.426			
detecting warning signals	Constant	1.127	1.632	0.115	0.620	12.814	0.000	0.204	0.301	0.765	0.570	15.592	0.000
	collecting, analyzing, storing and processing data	-0.138	-0.932	0.360				0.174	1.262	0.214			
	Adequacy of strategic techniques	0.473	3.241	0.003				0.432	2.742	0.009			
	Competitive intelligence	-0.093	-0.688	0.497				-0.070	-0.409	0.685			
	Business performance management	0.513	3.883	0.001				0.429	3.311	0.002			
preparedness for	Constant	1.655	1.649	0.112	0.198	2.789	0.048	1.266	1.594	0.119	0.286	5.407	0.001

crises	*collecting, analyzing, storing and processing data*	0.067	0.309	0.760				0.305	1.891	0.066			
	Adequacy of strategic techniques	0.127	0.597	0.556				0.078	0.424	0.674			
	Competitive intelligence	0.195	0.989	0.332				0.121	0.605	0.549			
	Business performance management	0.245	1.277	0.213				0.230	1.519	0.137			
Damage containment respons) (e	Constant	1.595	1.908	0.068	0.376	5.375	0.003	0.342	0.499	0.621	0.524	13.095	0.000
	collecting, analyzing, storing and processing data	-0.028	-0.157	0.876				0.250	1.792	0.081			
	Adequacy of strategic techniques	0.399	2.260	0.033				0.370	2.330	0.025			
	Competitive intelligence	0.044	0.271	0.789				0.016	0.092	0.927			
	Business performance management	0.257	1.608	0.120				0.306	2.341	0.024			
Learning from crises	Constant	2.530	2.573	0.016	0.201	2.824	0.046	1.661	2.109	0.041	0.262	4.902	0.003
	collecting, analyzing, storing and processing data	-0.097	-0.458	0.651				0.217	1.352	0.184			
	Adequacy of strategic techniques	0.476	2.292	0.031				0.401	2.200	0.034			
	Competitive intelligence	-0.169	-0.879	0.388				-0.263	-1.321	0.194			
	Business performance management	0.243	1.292	0.208				0.297	1.978	0.055			
Restoring activity	Constant	1.161	1.141	0.265	0.450	6.931	0.001	1.043	1.276	0.209	0.472	10.815	0.000
	collecting, analyzing, storing and processing data	-0.185	-0.845	0.406				-0.078	-0.468	0.642			
	Adequacy of strategic techniques	0.862	4.013	0.000				0.725	3.829	0.000			
	Competitive intelligence	-0.055	-0.274	0.787				0.047	0.227	0.822			
	Business performance management	0.120	0.615	0.544				0.086	0.552	0.584			

Source: *prepared by the researcher from the results of questionnaire.*

"...revealed that there exists an effect of the combined business intelligence dimensions on crisis management (at a 0.05 level of significance), which is evident from the calculated F value that amounted to 11.163. Analysis results revealed statistical significance of the dimension 'adequacy of strategic technology' as evidenced by the calculated T value that amounted to 2.773. The value of the impact factor reached 0.425, meaning that a unit increase in the level of interest in the dimension 'adequacy of strategic technology' in business intelligence shall lead to increasing crisis management by a value of 0.425, thus the main hypothesis is confirmed. ***Prior to interpreting these results, the structural integrity of the model was verified through Multicollinearity testing; all Variance Inflation Factor (VIF) values were strictly below 5, validating the stability and reliability of the regression coefficients. Furthermore, this significant impact of strategic technology strongly aligns with the findings of Moro et al. (2015), which emphasized that the maturity of BI techniques is fundamental for risk prediction and decision support in banking, confirming***

that advanced analytical tools are a cross-border necessity for institutional resilience during sudden market disruptions."

Sub-hypotheses

- **There exists a statistically significant effect of the combined business intelligence dimensions on detecting warning signals in some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia (at a 0.05 level of significance).**

To test this hypothesis, multiple regression analysis was applied. As is clear from Table 6,, the adjusted coefficient of determination reached 0.620, reflecting a net level of interest in the combined business intelligence dimensions after eliminating the standard error values resulting from crisis management. It also indicates that there is an effect of the combined business intelligence dimensions on crisis management in some banks in the Arab Republic of Egypt (at a 0.05 level of significance), as evidenced by the calculated F value that amounted to 12.814. Analysis results revealed statistical significance for the "adequacy of strategic techniques" dimension, as evidenced by the calculated T value that amounted to 3.241, and for the "business performance management" dimension, which is evidenced by the calculated T value that amounted to 3.883 and the value of the impact factor that reached 0.473 and 0.513, respectively. This means that a unit increase in the level of interest in the "adequacy of strategic technology" dimension and the "business performance management" dimension of business intelligence shall lead to increasing crisis management by a value of 0.473, 0.513, thus this hypothesis is confirmed. For some banks in the Kingdom of Saudi Arabia, the adjusted coefficient of determination reached 0.570, reflecting a net level of interest in the combined business intelligence dimensions after eliminating the standard error values resulting from crisis management. It was also found that there exists an impact of the combined business intelligence dimensions on crisis management (at a 0.05 level of significance), which is evidenced by the calculated F value that amounted to 15.592. Analysis results revealed the statistical significance of the "adequacy of strategic techniques" dimension, as evidenced by the calculated T value that amounted to 2.742, and for the "business performance management" dimension, as evidenced by the calculated T value that amounted to 3.311. The values of the impact factor for the two dimensions reached 0.432 and 0.429, respectively, indicating that a unit increase in the level of interest in the "adequacy of strategic technology" dimension and the "business performance management" dimension of business intelligence shall lead to an increase in crisis management by 0.432 and 0.429, respectively, thus confirming this hypothesis.

- **There exists a statistically significant impact of the combined business intelligence dimensions on preparedness for crises at some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia at a 0.05 level of significance.**

To test this hypothesis, multiple regression analysis was applied. Results presented in Table 6 reveal that the adjusted coefficient of determination amounted to 0.198, reflecting a net level of interest in the combined business intelligence dimensions after eliminating the standard error values resulting from crisis management. Results also show that there is an effect of the combined business intelligence dimensions on crisis management (at a 0.05 level of significance) at some banks in the Arab Republic of Egypt, as evidenced by the calculated F value that amounted to 2.789. The analysis results showed a lack of statistical significance for all the dimensions of business intelligence; thus, this hypothesis is rejected. For some banks in the Kingdom of Saudi Arabia, the adjusted coefficient of determination reached 0.286, reflecting a net level of interest in the combined business intelligence dimensions after eliminating the standard error values resulting from crisis management. It was also found that there is an effect of the combined business intelligence dimensions on crisis management

(at a 0.05 level of significance), as evidenced by the calculated F value that amounted to 5.407. The analysis results showed a lack of statistical significance for all of the business intelligence dimensions; thus, the hypothesis is rejected.

The statistical rejection of the impact of BI on crisis preparedness in both nations warrants a nuanced institutional interpretation. This outcome suggests that banks in both KSA and Egypt primarily rely on rigid, standardized international regulatory frameworks—such as Basel III compliance—for emergency planning, rather than dynamically leveraging real-time BI analytics to build flexible preventive mechanisms. Furthermore, the higher ranking of 'planned data collection' in Saudi banks can be attributed to the sweeping digital governance and structured data initiatives

- **There exists a statistically significant impact of the combined business intelligence dimensions on damage containment (response) in some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia (at a 0.05 level of significance).**

To test this hypothesis, multiple regression analysis was applied. It can be noticed from Table 6 that the adjusted coefficient of determination amounts to 0.376, reflecting the net level of interest in the combined business intelligence dimensions after eliminating the standard error values resulting from crisis management. It is also clear that there exists an impact of the combined business intelligence dimensions on crisis management at some banks in the Arab Republic of Egypt at a level of statistical significance of 0.05, as evidenced by the calculated F value that amounted to 5.375. Analysis results revealed the statistical significance of the dimension of the adequacy of strategic techniques in business intelligence, as evidenced by the calculated T value that amounted to 2.260. The value of the impact factor reached 0.399, indicating that a unit increase in the level of interest in the dimension of adequacy of strategic techniques in business intelligence shall lead to increasing crisis management by a value of 0.399, thus this hypothesis is confirmed. For some banks in the Kingdom of Saudi Arabia, the adjusted coefficient of determination reached 0.524, indicating a net level of interest in the combined business intelligence dimensions after eliminating the standard error values resulting from crisis management. It was also found that there is an impact of the combined business intelligence dimensions on crisis management (at a 0.05 level of significance), which is evidenced by the calculated F value that amounted to 13.095. Analysis results revealed statistical significance of the adequacy of strategic techniques dimension, as evidenced by the calculated T value that amounted to 2.330; and for the business performance management dimension too, as evidenced by the calculated T value that amounted to 2.341. The values of impact factors reached 0.370 and 0.306, indicating that a unit increase in the level of interest in the adequacy of strategic technology dimension and the business performance management dimension in business intelligence shall lead to increasing crisis management by 0.370 and 0.306, respectively, thus this hypothesis is confirmed.

- **There exists a statistically significant impact of the combined business intelligence dimensions on learning from crises in some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia (at a 0.05 level of significance).**

To test this hypothesis, multiple regression analysis was applied. As is clear from Table 6,, the adjusted coefficient of determination reached 0.201, indicating a net level of interest in the combined business intelligence dimensions after eliminating the values of the standard errors resulting from crisis management. It is also clear that there is an impact of the combined business intelligence dimensions on crisis management in some banks in the Arab Republic of Egypt (at a 0.05 level of significance), as evidenced by the calculated F value that amounted to 2.824. Analysis results revealed the statistical significance of the adequacy of

strategic techniques, as evidenced by the calculated T value, which amounted to 2.292. The value of the impact factor that reached 2.292 indicates that a unit increase in the level of interest in the adequacy of strategic techniques dimension in business intelligence shall lead to increasing crisis management by a value of 0.476, thus this hypothesis is confirmed. For some banks in the Kingdom of Saudi Arabia, the adjusted coefficient of determination reached 0.262, indicating a net level of interest in the combined business intelligence dimensions after eliminating the standard error values resulting from crisis management. It was also found that there is an impact of the combined business intelligence dimensions on crisis management (at a 0.05 level of significance), as evidenced by the calculated F value that amounted to 4.902. The analysis results showed the statistical significance of the adequacy of the strategic technology dimension, as evidenced by the calculated T value that amounted to 2.200. The impact factor value that reached 0.401 indicates that a unit increase in the level of interest in the adequacy of the strategic technology dimension in business intelligence shall lead to increasing crisis management by a value of 0.401, thus this hypothesis is confirmed.

- **There exists a statistically significant impact of the combined business intelligence dimensions on the recovery of activity in some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia (at a 0.05 level of significance).**

To test this hypothesis, multiple regression analysis was applied. As shown in Table 6,, the adjusted coefficient of determination reached 0.450, indicating a net level of interest in the combined business intelligence dimensions after eliminating the values of the standard errors resulting from crisis management. It also indicates that there is an impact of the combined business intelligence dimensions on crisis management in some banks of the Arab Republic of Egypt (at a 0.05 level of significance), as evidenced by the calculated F value that amounted to 6.931. The analysis results revealed the statistical significance of the adequacy of the strategic techniques dimension, as evidenced by the calculated T value that amounted to 4.013. The impact factor value that reached 0.862 indicates that a unit increase in the level of interest in the adequacy of strategic techniques dimension in business intelligence shall lead to increasing crisis management by a value of 0.862, thus this hypothesis is confirmed. For some banks in the Kingdom of Saudi Arabia, the adjusted coefficient of determination reached 0.472, indicating a net level of interest in the combined business intelligence dimensions after eliminating the standard error values resulting from crisis management. It was also found that there is an impact of the combined business intelligence dimensions on crisis management (at a 0.05 level of significance), as evidenced by the calculated F value that amounted to 10.815. The analysis results showed the statistical significance of the adequacy of the strategic technology dimension, as evidenced by the calculated T value, which amounted to 3.829. The impact factor value that reached 0.725 means that a unit increase in the level of interest in the adequacy of the strategic technology dimension in business intelligence shall lead to increasing crisis management by a value of 0.725, thus this hypothesis is confirmed.

Conclusion

The achieved results indicate the research variables' ability to achieve the research objectives, as well as the high level of sample individuals' responses to all dimensions and statements concerning business intelligence and crisis management at the banks in Egypt and Saudi Arabia. They also indicate similarity of expressions regarding the importance of using modern technology programs in managing and implementing work efficiently, the importance of attracting distinguished skills, the importance of setting preventive rules to prevent crises, and the importance of taking the necessary measures to continue practicing normal activities at both Egyptian and Saudi banks, while indicating differences for the rest of the expressions.

Recommendations

- ***Invest in business intelligence due to the implications it has for providing the best services that meet the needs and desires of customers.***
- ***Strengthen the crisis management system through the adoption of business intelligence, due to its great importance.***
- ***Establish specialized, independent Business Intelligence Units (BIUs) directly tethered to Risk Management and Compliance departments to seamlessly translate analytical data streams into immediate contingency actions.***
- ***Encourage central banks to develop shared, cloud-based inter-bank intelligence platforms for anonymous data-sharing regarding emerging threats, thereby enhancing collective Competitive***
- ***Achieve balance in the crisis management system, especially in the preparedness and prevention phases.***
- ***Benefit from the experiences and expertise of other local and international banks.***
- ***Promote interest in business intelligence processes.***
- ***Increase the level of awareness about crisis management.***

Summary: *The research problem can be summarized by the following main questions: What is the level of business intelligence among bank employees? What is the level of crisis management in banks? What is the impact of business intelligence at banks on crisis management? Several sub-questions that emerged include: What is the impact of the combined business intelligence dimensions at banks on each dimension of business intelligence individually? A questionnaire was designed to collect and rate responses from employees at some banks in the Arab Republic of Egypt (Greater Cairo) and the Kingdom of Saudi Arabia (Mahayel City, Asir Province) based on a five-point Likert scale. Frequencies and percentages were used to describe the demographic variables. The research applied the Cronbach's alpha reliability coefficient test, multiple regression analysis, variance inflation factor, and tolerance test. The analysis results revealed the following:*

- *The calculated reliability values for the research variables indicate a high reliability coefficient and, thus, their ability to achieve the research objectives.*
- *Responses collected from the sample individuals regarding all dimensions and statements concerning business intelligence and crisis management recorded high levels for banks in Egypt and Saudi Arabia.*
- *In regard to data collection, analysis, storage, and processing, the statement "data processing operations" and the statement "data collection according to the bank's plan designed to serve its objectives" ranked first for banks in Egypt and Saudi Arabia, respectively.*
- *As for the "adequacy of strategic techniques," the statement "the importance of using modern technology programs in managing and implementing work efficiently" ranked first for both Egyptian and Saudi banks.*
- *For competitive intelligence, the statement "the importance of attracting distinguished skills" ranked first for both Egyptian and Saudi banks.*
- *Regarding business performance management, the statement "the importance of consistency between the goals to be achieved" and the statement "importance of*

monitoring performance to achieve a clear vision" ranked first for banks in Egypt and Saudi Arabia, respectively.

- *With regard to detecting warning signals, the statement "the importance of dealing with crises" and the statement "importance of conducting periodic surveys to identify the possibility of crises incidence" ranked first for banks in Egypt and Saudi Arabia, respectively.*
- *As for preparedness for crises, the statement "the importance of setting preventive rules to prevent crises" ranked first for both Egyptian and Saudi banks.*
- *In regards to damage containment (response), the statement "the importance of controlling crises at the beginning of their occurrence" and the statement "the importance of conducting a periodic survey to identify the possibility of crises incidence" ranked first for banks in Egypt and Saudi Arabia, respectively.*
- *As for learning from crises, the statement "the importance of drawing lessons from crises experienced by other banks" and the statement "the importance of benefiting from the experiences of our own bank and other banks in the future" ranked in first place for banks in Egypt and Saudi Arabia, respectively.*
- *With regard to the recovery of activity, the importance of taking the necessary measures to continue practicing normal activities ranked first for both Egyptian and Saudi banks.*
- *There exists a statistically significant impact of the combined business intelligence dimensions on crisis management in some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia (at a 0.05 level of significance).*
- *There exists a statistically significant impact of the combined business intelligence dimensions on detecting warning signals, preparedness for crises, damage containment (response), learning from crises, and recovery of activity in some banks in the Arab Republic of Egypt and the Kingdom of Saudi Arabia (at a 0.05 level of significance).*

Future Research Studies :

"Future studies should expand this framework by investigating Strategic Agility as a mediating variable between business intelligence and crisis management. Furthermore, conducting comparative research across other MENA region countries would provide deeper insights and enhance the generalizability of these findings in different institutional contexts."

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