The Influence of Business Intelligence on Strategic Intelligence a Study on Commercial Banks in Egypt

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Abstract
The objective of the research is to examine the influence of Business Intelligence (BI) on Strategic Intelligence (SI). The research population consists of all employees at Commercial banks in Egypt. The researcher adopted a sampling method to collect data for the study. The appropriate statistical methods such as Alpha Correlation Coefficient (ACC), Confirmatory Factor Analysis (CFA), Multiple Regression Analysis (MRA), were used to analyze the data and test the hypotheses.
The research has reached a number of results, the most important of which are (1) organizations do not rely on BI applications and technologies as a repository of data and immediate analytical processing, (2) the organizations operate in a competitive framework, represented by other organizations operating in the Egyptian environment, which makes the organization's environment suitable for using BI and competitive intelligence applications, (3) the low level of the organizations 'infrastructure to deal with the field of software that supports BI . Perhaps this is due to the organizations' tendency to deal with technologies that work to accomplish the traditional activities of the organization, (4) the interest in BI was limited to certain aspects, the most important of which is the use of BI in reviewing and completing operations within the organization, while the lesser concerns were related to various aspects, the most important of which is cooperation with individuals inside and outside the organization, and the search for new knowledge, and allowing individuals to learn in multiple locations, (5) attention has been focused on the practice of BI in specific aspects, the most important of which is the focus on ensuring that workers in the organization understand the importance of BI for the success of the organization and considering this concept as part of the organization's culture.
The study referred to a number of recommendations, the most important of which are (1) the necessity of attracting workers with experience and skill in dealing with BI techniques, as well as the possibility of developing workers in the technical field by directing them to participate in training courses in this field, (2) the use of the data warehouse as the most prominent techniques that provide analytical information through which administrative decisions are made, in addition to the analytical and immediate processing of the data and presenting it in an appropriate manner, (3) the necessity of integrating BI techniques in a manner that achieves the highest level of efficiency in exploiting and analyzing data, in order to achieve the highest level of decisions in light of the use of cost-benefit analysis, (4) identify the applications of BI in organizations operating in the same field in order to benefit from them and achieve the highest levels of benefit in this field, (5) the need to pay attention to amending the services provided by banks to their customers, with the aim of making use of BI systems in developing the performance of employees, which leads to the survival, growth, and distinction of the banking sector while it is in the process of providing services to its customers, (6) the necessity to invest in all available resources in a manner that meets the needs and desires of customers on a daily basis, and to work on increasing and diversifying the services provided.
Keywords: *Business Intelligence, Strategic*

1. Introduction

The term BI appeared in 1958 when Hans Peter adopted the idea of building an automated system for disseminating information at the level of the organization (Luhn, 1958). However, the real interest in BI began in the late 1980s, as it was the beginning of the shift from focusing on reporting and information to managers to focusing more on situational analysis about how the organization has performed in the past, current performance, and future performance (Ionescu & Podaru, 2014).

Howard Dresner, Chief Executive Officer at Hyperion, is consider the father of the term BI in 1989, which he described as the concepts and methods that are used in the process of improving decision-making at work through the use of supportive systems based on facts (Evans, 2010).

The term BI has been used instead of decision support systems, executive information systems, and management information systems, and in some literature the term BI and analytics (Abai et al., 2016).

Reports indicate that investments in BI tools are expected to double at the service level (Tabbitt, 2013).

In the context of the decision support environment, BI systems have improved the effectiveness of decision-making at different levels in various areas, including the industrial sector in airlines, banking, insurance, finance, securities, manufacturing, and communications (Propovic et al., 2012, Ramakrishnan et al., 2012).

Although many organizations have successfully implemented BI systems in organizational decision-making, decision-making and performance, some organizations have not achieved this (Henshen, 2008).

Researchers have viewed BI from different perspectives, with some researchers studying BI as a tool from a technical perspective (Elbashir, et al., 2008), while others have viewed BI as an approach or a means to support decision-making (Moss & Atre, 2007).

The effectiveness of BI lies in its ability to support the decision-making process within the organization and to provide decision-makers with appropriate and timely information (Massa & Testa, 2005).

Most organizations are striving to understand the increasing diversity, speed, and volume of data that is being produced from internal and external sources. The importance and role of BI in understanding the huge volume of data and helping organizations improve their performance appears (Isik et al., 2013).

A critical component of an organization's success is its ability to make use of all available information (Cody et al., 2002). The ability to collect and analyze data and turn it into information that can be used in a timely manner is not only a necessity for success, but also a necessity for survival (Pirttimaki et al., 2006).

Investing in BI has a high priority in all organizations worldwide (Gartner, 2016), and its global market is expected to reach 22.8 billion dollars in 2020 (Ghosh, 2018).

Strategic Intelligence (SI) is an integrated system of leadership qualities, and these qualities must be considered in the context of the challenges facing leaders and the relationships between leaders and their peoples, and from this standpoint, the leaders' philosophy and their personalities affect the way that expresses their personality or personality from the characteristics of SI. This is only when things go according to a deliberate plan and when leaders face major conflicts, leaders become more effective when taking advantage of the intrinsic motivation of their followers (Maccoby & Scudder, 2011).

Many researchers have been interested in the topic of SI in organizations of all types and sizes, and perhaps this is due to developments and changes in the contemporary business environment. Competition has become intense after organizations use SI in making decisions, formulating strategies, and providing information to various decision makers in the organization in a timely manner (McDowell, 2005).

2. Literature Review

2.1. Business Intelligence

2.1.1. Business Intelligence Concept

The concepts presented by researchers regarding the term BI have varied and varied, depending on the scientific background or the viewpoint through which this concept is viewed.

Intelligence is the mental energy that we apply to our prior knowledge in order to generate ideas, discover relationships between things, draw conclusions, and solve problems. Intelligence has transferred to organizations and their actions, and organizations have turned to BI or the use of information systems to collect and analyze information from internal and external sources in order to make efficient and effective decisions (Chen, 2016).

BI is the leveraging of software and services to transform data into actionable vision and support strategic and tactical business decisions of the organization (Pratt & Fruhlinger, 2019).

BI is a term that encompasses analytical applications and infrastructure, as well as best practices in creating benefit (Gartner, 2019).

BI is the technologies, applications, and practices for collecting, integrating, analyzing and presenting business information to support better and faster decision-making (Balachandran & Prasad, 2017)

BI is an umbrella term that includes a variety of information technology applications that are used in analyzing the organization's data and communicating it to users (Maheshwari, 2015).

BI is the use of analytical methods with the purpose of using them both now and in the past to predict the future (Alawin & Mayteh, 2014).

BI is a set of technological tools and processes that help convert data into information, information into knowledge, and knowledge transfer to help the organization's strategy for planning and facing competitors (Loshin, 2013).

BI is a set of technologies that help to discover the best data from the huge amount of data to improve the production process (Naraina, 2013).

BI is the process of transforming raw data into useful information in order to create strategic and operational vision on the one hand, and decision-making on the other hand, with the aim of achieving real business benefits (Duan & Xu, 2012).

BI is a set of tools and techniques that help convert a large amount of data from different sources into meaningful information to support decision-making and improve organizational performance (Ramakrishnan et al., 2012).

BI is the computer-based technologies used in identifying, extracting and analyzing business data and using it in making various decisions in an organization with the aim of improving its performance (Kumar, 2012).

BI is the use of technology in the process of retrieving, extracting and analyzing the organization's data in order to produce concise and meaningful information to support decision-making, and this type of intelligence is usually presented in the form of a written report, summary or presentation with diagrams (Barbieri, 2012).

BI is the core of the organization's system, which is based on a series of strategic and tactical steps implemented by technology in terms of providing data and producing analytical results to generate an efficient and effective decision-making process in the business sector, at a time when many organizations seek to explore the vast amount of data. (Karim, 2011).

BI is a term that includes tools, databases, data warehouses, and performance management, all of which are combined into a unified software package (Turban & Volonino, 2011).

BI is a set of processes, tools, and technologies that deal with data and turn it into information, and information into knowledge, and this accumulated experience, as well as the accumulated knowledge, are transformed into sections that are managed intelligently and used in decision-making, building appropriate strategies and tactics (Turban et al., 2011).

BI is a process that focuses on supporting a variety of business functions, and using advanced analytics to create real benefit (Glancy & Yadav, 2011).

BI is a group of programs that collect and analyze data in order to assist workers in the field of making decisions efficiently and effectively (Chaudhuri et al., 2011).

BI is the approach followed by the management of an organization that allows identifying useful information relevant to its decisions (Lioyd, 2011).

BI is a set of tools and practices that help managers and users control business activities, improve organization performance and maintain competitiveness (Matei, 2010).

BI is the use of technologies, applications, and processes to collect, store and analyze data with the purpose of helping its users reach appropriate decisions (Wixom & Watson, 2010)

The steps in analyzing BI systems are to process data with the aim of producing the necessary information for its users. These steps are data collection, data storage, information dissemination and use of information (Kaplan & Norton, 2010).

BI is a set of perceptions, methods, and processes to improve managerial decisions, use information from multiple sources, and apply experiences to develop a correct understanding of business dynamics (Tabatabaei, 2010).

BI is an integrated set of tools, technologies and software used to discover, simplify and analyze information from various sources (Yeoh & Koronios, 2009).

BI is a large group of application programs that are used in data collection, analysis, and storage with the purpose of assisting business practitioners in making better decisions (Watson, 2009).

BI is a set of data repositories related to customers, competitors, the competitive environment and internal processes of the organization, which gives the organization the ability to make decisions efficiently and effectively (Dayal et al., 2009).

BI is a technological method that is used in business management to manage data in order to make better decisions (Rubio et al., 2008).

BI is a description of the applications that are used to collect, analyze and provide data and information in the organization for the purpose of making business decisions in the best possible way (Wu et al., 2007).

BI is the process of properly collecting the right information in the right way and at the right time and delivering the right results to the right people for the purpose of making appropriate decisions (Xu & Kaycl, 2007).

BI is a package of new technologies such as data warehouse, real-time analytical processor, and data search that are used in structured data processing and analysis (Haag et al., 2007).

BI is the umbrella that brings together the architecture, tools, database, analytical tools, applications, and methodologies (Turban et al., 2007).

BI is a set of tools and methods that improve executive decision-making, business activities, and increase value in an organization (Zeng et al., 2006).

BI is all that is related to obtaining, accessing, understanding, analyzing and converting one of the basic and valuable assets of the organization, which is raw data into effective information for the improvement of business and decision-making process in the organization (Azvine et al., 2006).

BI is a management philosophy and an essential tool that helps organizations manage and improve information in order to make more effective decisions (Lonnqvist & Pirttimaki, 2006).

BI is a set of approaches and processes by which raw information is converted into final information that is used in support of strategic, tactical and operational plans in a manner that leads to improved decision-making (Kimball et al., 2005).

BI is a set of software used to rationalize decisions within an organization and increase its effectiveness. This is in addition to providing the latest information on the various commercial actors (Pirttimaki, 2004).

BI is a set of analytical tools used to understand the capabilities available to the organization, trends in the market, technology used in the environment and the work of competitors, with the aim of providing the necessary information to planners and decision-makers within the organization, with the aim of converting information into a competitive advantage for the organization (Negash, 2004).

BI is a group of processes that convert data into information, as well as convert information into knowledge (Golfarelli et al., 2004).

BI is an information system that allows users to look at data in databases easily and quickly (Turban, 2002).

BI is a purposeful analytical process to collect and accurately analyze information about competitors, markets, and customers to support business decisions or convert data, information and knowledge into actionable value (Kalakota & Robinson, 2000).

2.1.2. Business Intelligence Importance

BI analyzes help to discover important trends, identify the opportunities that can be exploited, as well as the threats that must be faced, and BI helps shape SI analyzes (Fleisher & Bensoussan, 2007).

The benefits of BI are tangible and intangible, and that is why companies invest in it in the hope of a quantum leap in the future (Negash, 2004).

The tangible benefits of BI are to reduce the overall infrastructure costs in the organization by eliminating the data extraction processes that are widespread in the organization that may contain duplicate data. Accessing data from multiple sources in a centralized, single format (Watson & Wixom, 2007).

BI plays an important role in improving organizational performance (Trieu, 2018). It also contributes to improving the operational efficiency of operations, raising the dynamic capabilities necessary to innovate new products or services, enhancing organizational intelligence, and the dynamic organizational structure (Moreno et al., 2018).

BI also helps in making appropriate strategic and operational decisions since it eliminates the method of guessing, in addition to that BI provides more accurate data on various business aspects such as financial data, production, and customers, which helps management in making decisions that are based on reality. It is not just a guess (Moreno et al., 2018).

2.1.3. Business Intelligence Dimensions

There are three dimensions of BI. They are technology, people, and strategic alignment (Torres et al., 2018; Knabke & Olbrich, 2017; Yeoh & Popovič, 2015; Sangari & Razmi 2015; Cosic et al., 2012).

2.1.3.1. Technology

Technology refers to the technological components of a BI system, and includes extracting accurate data from various process systems to be integrated into the data ware house, and using interactive reporting technology to address structural problems.

In addition to that, the use of data mining technology to deal with non-structural problems, and display information according to the user's request for the system, in addition to the necessity of integrating the BI system with other information systems.

BI technology includes data quality from its sources, information query, report generation, data visualization functions, and knowledge discovery by extracting variable information from data in databases (Yeoh & Koronios, 2010). A set of basic elements of technology must be taken into account in the sense that it is one of the basic dimensions of BI and these elements are data quality, reporting and visualization technology, discovery baseness analytic technology, user access, integration with other systems, Systems Integration (Torres et al., 2018).

2.1.3.2. People

The management role is concerned with the necessary support, the skills of the BI team, and the skills of the system user. Individuals include everything related to those related to BI systems, such as senior management, its team, and its users in terms of their predominant technical, managerial and cultural capacity that governs their actions and decisions (Mungree et el., 2013).

There is a set of basic elements for individuals in the sense that it is one of the basic dimensions of BI. These elements are to support the upper management, the team and its skills, the system user and the skills of (Yeoh, & Koronios, 2010).

2.1.3.3. Strategic Alignment

Strategic alignment means undertaking the necessary restructuring to align applications and uses of BI with the objectives of strategic operations in order to support and enhance the operational processes (Watson & Wixom, 2007).

Strategic alignment is the foundation in the governance of information systems, which requires alignment of BI, and business strategy must be aligned with strategies and plans of information technology with strategic business objectives so that information technology provides the ability to provide business value and create a clear vision of BI (Wilkin & Chenhall, 2010).

Strategic alignment means that BI strategies and plans are aligned with the objectives of operations management (Luftman, 2000).

2.2. Strategic Intelligence

2.2.1. Strategic Intelligence Concept

SI is a tool to provide information to decision-makers in the organization, as it is a tool that enables them to understand the environment in which the organization operates, in addition to analyzing information to activate their capabilities, plan for the future, and adapt to environmental variables (Johnson, 2011).

SI is a set of processes that aim to search for and process information, so that it is within the reach of the person and at the appropriate time, with the aim of making decisions that help the organization achieve its goals (Clar et al, 2008).

SI is the arrival of the right information to the decision makers at the right time, so that they can make the right decisions about the future work of the organization (Xu, 2007).

SI is the tool for understanding the current state of the organization, with the aim of developing an appropriate strategy commensurate with its working conditions (Pirttimaki 2007).

SI is a tool to increase the competitive advantage of the organization, through the smart use of the information available in the various decision-making process of the organization (Landy et al, 2006).

SI is a term used for intelligence activities in the field of strategic planning and strategic management, where SI is concerned with the needs of decision makers from those with higher management levels, and it also focuses on future activities (Liebowitz 2006).

SI is what supports strategic management by contributing to the collection, analysis and distribution of information, and the higher the level of decision-making in the organization, the greater the need for information (Viitala & Pirttimaki, 2006).

SI is the ability to develop strategies with the purpose of facing future environmental impacts. This intelligence includes talent, understanding, knowledge, flexibility, and a broad imagination (Service, 2006).

SI is the work to achieve long-term goals, and dealing with the goals of the organization in a planned and thoughtful way (Mc Dowell, 2005).

SI is a systematic process of producing necessary information, with the aim of facilitating decision-making in the long run (Finland, 2005; White, 2004).

SI is the process of reviewing the data obtained from various sources, then linking this data to serve the goals of the organization (Sharfman, 2004).

SI is a process that aims to support business decisions in multiple areas, in order to gain market share and new customers and outpace competitors (Stenberg, 2009).

SI is the intelligence possessed by managers in order to formulate long-term strategic policies and plans for an organization (Quarmby, 2003).

SI is what an organization needs to know about its business environment in order to develop a vision of its operations, manage changes in preparation for the future, design appropriate strategies to create value for customers, and improve profitability in current and new markets (Tham & Kim, 2002).

SI is an intelligence that characterizes organization leaders in terms of foresight, organized thinking, future vision, partnership, and the ability to motivate workers (Maccoby, 2001; 2004).

SI is an understanding of where and how the organization will maintain its competition in the long term, and face future challenges. Also, SI should act as a monitoring system to warn the organization regarding the threats and opportunities available in its external environment (Thierauf, 2001).

SI is a tool for providing decision makers with information about the external environment in a timely manner (Pauker, 2000).

SI is the innovation of new methods that direct the leaders of the organization towards making its decisions by providing the information at the right time, with the quality, accuracy, and quantity required in order to take appropriate decisions in the organization (Kuhlmann et al., 1996).

In light of the foregoing, SI can be defined as the future vision enjoyed by the leaders of the organization based on information that helps them employ their ideas for the purpose of making strategic decisions in the organization.

In other words, SI is based on extrapolating the future through strategic analysis of the internal and external environment, with the aim of assisting the organization in making its decisions and formulating its strategies. In sum, it can be said that SI is an intelligence enjoyed by the leaders of organizations, and its elements are foresight, organized thinking, future vision, motivation or the ability to motivate workers, partnership, and these elements help the leaders of the organization in making decisions, formulating plans, policies, strategies and preparing to face crises Before it happened.

2.2.2. Strategic Intelligence Dimensions

The dimensions of SI are foresight, organized thinking, future vision, ability to motivate workers, and partnership. This can be illustrated as follows (Maccoby, 2001; 2004; Maccoby & Sucdder, 2011):

2.2.2.1. Foresight

Foresight is the extent of the organization's ability to see future trends through identifying dynamic factors in the past and present. The lack of foresight component negatively affects the performance of the organization (Macooby, 2001; 2004).

Foresight is the possibility of knowing the future, influencing it, and controlling it, as it refers to the individual's vision of future trends through identifying the movement factors at the present time (Maccoby, 2004).

Foresight is one of the modern methods that helps in gaining more knowledge about the future conditions of the organization. Foresight is an early integrated approach to the recognition of new technology, competitors, new markets, change in customer requirements, and the systematic consolidation resulting from the recognition of strategic planning. This definition emphasizes the link between foresight and strategic planning, and foresight can also be used for strategic planning (Cuhls, 2003).

Foresight is the ability to think about variables that are unclear and cannot be identified, even though they are what shape the future (Maccoby, 2001).

The importance of foresight appears in employing SI for leaders of organizations in multiple areas (1) adopting anticipation in managing environmental changes in a calm and orderly manner, (2) leaders 'success in adopting scenarios that provide a description of future events, (3) providing inductive power that allows the leader to develop targeted strategies. Towards achieving the organization's goals (Quarmby, 2003).

The importance of foresight is highlighted as one of the elements of SI through (1) helping leaders to predict the opportunities and risks surrounding the organization (Macooby, 2004), (2) providing information to managers with the purpose of taking appropriate decisions. (Clar, et al., 2008), (3) studying the past and understanding the present so that managers can know the future (Okkonen et al, 2011).

2.2.2.2. System Thinking

System thinking is the ability of the organization to recognize the common vision of the workers in the organization and to learn about their new ideas and opinions (Gopalrao & Kondalkar, 2007).

System thinking is the ability to synthesize and integrate a group of elements to understand how they interact with each other in order to achieve the goals of the organization, where the parts and their relationship with the whole are studied and evaluated in terms of their success in serving the goals of the system (Macooby, 2004).

Organized thinking is the ability to merge elements more than separating them into parts, then analyzing them together, then evaluating them in terms of their relationship with the whole, and focusing on the way they interact with each other in terms of their success in serving the goals of the system (Davis, 2002).

The benefits of organized thinking stand out as one of the dimensions of SI in being (1) a framework for strategic thinking and a way to confront environmental complexities (2) a way to learn new things easily, (3) A better way to learn and gain knowledge (4) a clearer view, and a more accurate evaluation of the course of events in the organization (5) A better way to devise strategies to solve complex problems (6) Provide the opportunity for the participation of individuals and work teams in analyzing problems (7) means of communication Recent between different departments of the organization and its managers (Haines, 2007).

2.2.2.3. Visioning Future

Vision is a clear and concise description of what you want the organization to be, and it is an expression by individuals about what they want the organization to be in the future. Success comes through defining the areas that it should focus on, and also identifying the areas that the organization should stay away from (White, 2005).

Future vision is the ability of the individual to form a picture of something that has not been fully tested, away from the term speculation, which refers to the individual's ability to see developments before they happen, and which is related to something that happened previously and awaits its result (Hianes, 2007).

Vision as one of the dimensions of SI should give a comprehensive picture of an ideal future that describes all parts of the organization (Maccoby, 2004).

The role of the vision as an element of SI for successful leaders emerges in terms of (1) it being one of the axes of strategic leadership, (2) facing challenges in managing both cognitive work and intellectual capital, (3) That the new vision is a key to success in strategic change processes, (4) it provides a perception about the organization's customers because they are its goal, as well as recognizing their satisfaction with their products, forming a new vision for them and familiarity with new technologies in their service (Fiora, 2003).

2.2.2.4. Motivation

The ability to motivate workers is the forces available within a person that can be influenced by the purpose of doing a specific job in the organization (McShane & Glinow, 2008).

The ability to motivate workers is the ability of a leader to motivate individuals to believe in the goals of the organization and work to achieve them. The ability to motivate workers expresses the act that prompts the individual to adopt an appropriate point of view to complete the work assigned to him satisfactorily (Maccoby, 2001; 2004).

There are different types of incentives that must be provided to employees, and these incentives are represented in four types (4R's), which are Rewards, Responsibilities, Reasons, Relationships, and a smart leader is the one who can use various means to motivate employees to implement the perceptions and visions that have been developed (Maccoby, 2001).

The ability to motivate workers is the ability of the leader to motivate the emotions and desires of the individual towards performing a specific action, and to translate the motives of the individual in the form of behavior that expresses his readiness to exert the effort that enables him to achieve the goals of the organization, then satisfy what he feels in terms of deficiency in his material and moral needs that are achieved in exchange for his performance (Davar, 1994).

2.2.2.5. Partnership

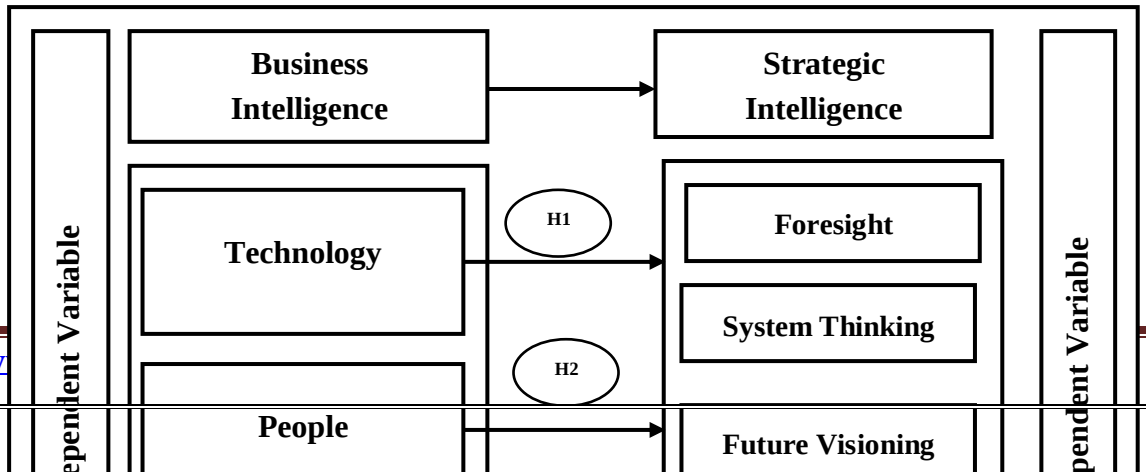
Partnership is the process of cooperation between two or more organizations, with the aim of building a successful business strategy, and smart utilization of partnership energy to achieve the desired goals, and the partnership reflects the extent of the manager's ability to establish strategic alliances (Maccoby, 2001; 2004).

Partnership reflects the leader's ability to be proficient in establishing a comprehensive vision of partnership through concluding cooperative agreements, alliances or mergers with other banks, and the role of partnerships in upgrading the capabilities of leaders of organizations is determined as it is (1) one of the contemporary organizational trends that pave the way to improving partners' efficiency in performing Missions, reduce costs and turn their competition into cooperation, (2) One of the mechanisms for coping with the challenges of a turbulent environment and exploiting the opportunities resulting from technological developments and ensuring the flow of expertise and ideas between partners, (3) a cooperative framework for participating in scarce materials and threats to enter new markets and adapt to the changing environment, (4) satisfying the needs of the beneficiaries and expanding their service range, excelling in performance, supporting long-term investment, achieving greater value for all parties to the partnership, (5) and finally, getting rid of the regulatory inertia and reducing the risks resulting from the manufacture and marketing of new products (Daft, 2004).

Partnership is achieved through achieving goals, and mutual benefit, as each organization seeks to understand the goals and strategies of the other organization, and when forming a partnership, leaders look for partnerships whose leaders have a high degree of intelligence and who add value to their organizations and not just increase the size of the organization. In the case of partnership, the two organizations work together to achieve mutual benefit and that each organization understands the goals and strategies of the other organization (Maccoby, 2001; 2004).

3. Research Model

Figure (1) Proposed Comprehensive Conceptual Model



The figure shows that there are one independent variable (BI) and one dependent variable (SI). The research framework suggests that BI have an impact on SI.

BI is measured in terms of technology, people, and strategic alignment (Torres et al., 2018; Knabke & Olbrich, 2017; Yeoh & Popovič, 2015; Sangari & Razmi 2015; Cosic et al., 2012).

SI is measured in terms of foresight, system thinking, future vision, ability to motivate workers, and partnership (Maccoby, 2001; 2004; Maccoby & Sucdder, 2011).

4. Research Questions

The research problem has two sources. The first source is to be found in previous studies. There is a lack in the number of literature review that dealt with the analysis of the relationship between BI and SI. This called for the researcher to test this relationship in the Egyptian environment.

In light of the review of previous studies, there is a study aimed at identifying the effect of BI on BI capabilities. The study found that there is a significant relationship between the experience of BI employees and the capabilities of BI. The study also indicated that BI can be considered a strategic investment in improving the performance of the organization (Torres et al, 2018).

There is a study that aimed to implement the service oriented BI (SOBI) to integrate academic and financial data in the data warehouse. The study found that when implementing SOBI, therefore, Dashboard applications that work to manage the data integration process must be performed, and data integration is usually done on the BI. The service provider can be called by the dashboard application to perform the data retrieval process and transfer it to the data warehouse (Somya, 2018).

There is also another study aimed at identifying the effect of BI on artistic creativity. The study found a relationship between the BI dimensions represented in data storage, data mining, and immediate analytical processing on technical creativity in the organization (Irtaimeh et al, 2016).

There is a study aimed at identifying the impact of BI on managing organizational performance. The study concluded that BI is considered a basic necessity to assist decision makers in a way that leads to improving organizational performance.

The study also indicated that designing a good BI system is useful to ensure that the organization's performance management is done effectively and more dynamically (Yahaya et al, 2016).

There is a study aimed at identifying the way in which BI can help in knowledge management for employees. The study indicated that BI systems play an important role in achieving a competitive advantage for employees if they are able to employ and exploit BI tools such as data warehouse, data search, data analytical processing, and the process of reading, converting and writing data (Muhamnad et al., 2014).

There is another study aimed at developing a framework of critical success factors in BI. The study found all the factors that are strongly and successfully linked to the application of BI, with the exception of the technological framework, and they classified these factors from most to least important which are senior management support, the executive sponsor, the clear vision, Managing change, user engagement, aligning BI strategy with business goals, team skills, adequate resources, all of these factors lead to BI success (Mungree et al., 2013).

There is a study aimed at identifying the processes that underlie business administration and the relationship between it and BI. The study found that managing and improving work performance is a

prerequisite not only for increasing commercial profitability but also for staying in a competitive and fast-moving business environment (Yan & Xiangjun, 2010).

The second source is the pilot study, which was conducted an interview with (30) employees at Commercial banks in Egypt. The researcher found through the pilot study several indicators notably the important role that could be played by BI in affecting SI at Commercial banks in Egypt. The research questions are as follows:

Q1: What is the relationship between BI (Technology) and SI at Commercial banks in Egypt?
Q2: What is the nature of the relationship between BI (People) and SI at Commercial banks in Egypt?
Q3: What is the extent of the relationship between BI (Strategic Alignment) and SI at Commercial banks in Egypt?

5. Research Hypotheses

In the light of a review of previous studies, there is a study aimed at identifying the effect of BI on the quality of decision-making. The study found that the existence of BI management has direct and indirect positive effects on data quality and information quality, and that all these factors affect the quality of managerial decision-making (Wieder & Ossimitz, 2015).

There is also another study aimed at identifying the effect of BI on the agile performance of the supply chain. The study concluded that there is a significant relationship between the different dimensions of BI in administrative efficiency, technical competence, cultural competence and the lean performance of the supply chain which is represented in customer satisfaction, productivity, Sales, delivery, cost, quality, and product development capability (Sangari & Razmi, 2015).

There is a study aimed at identifying the nature of the relationship between BI and knowledge management. The study concluded that BI systems play an important role as a tool for knowledge management for workers in the financial sector, and this is in addition to providing benefit to this sector, which is always characterized by the speed of change, as well as the huge size of Data used (Muhammed & et al., 2014).

There is also a study concerned with identifying the potential for BI to reduce the time allocated to decision-making in the organization. The study has found that the decision-making process necessarily leads to changes in the organizational behavior of all individuals working in the organization in a manner that leads to enhancing the quality of business decisions and their approach (Bara & Knezevic, 2013).

There is a study interested in learning about the role of BI in knowledge exchange. The study found that there is a significant impact of real-time analytical processing, data mining, and data warehouse on knowledge sharing. The results also indicated that BI tools had the greatest impact on sharing knowledge, and these tools are represented in the analytical processing of data, searching for it, and extracting it from all sources available to it (Barakat et al., 2013).

There is a study concerned with choosing the relationship between BI and information quality. The study found that the implementation of BI systems positively affects the quality of information. Also, the maturity of the BI system affects the quality of the information content and the quality of the methods used (Popovic et al., 2009).

The following hypotheses were developed to decide if there is a significant correlation between BI and SI.

H1: There is no statistically significant relationship between BI (Technology) and SI at Commercial banks in Egypt.
H2: BI (People) has no statistically significant effect on SI at Commercial banks in Egypt.
H3: There is no relationship between BI (Strategic Alignment) and SI at Commercial banks in Egypt.

6. Research Population and Sample

The population of the study included all employees at commercial banks in Egypt. The total population is 66536 employees. Determination of respondent sample size was calculated using the formula (Daniel, 1999) as follows:

$$n = \frac{N \times (Z)^2 \times P\,(1-P)}{d^2\,(N-1) + (Z)^2 \times P\,(1-P)}$$

A number of samples, obtained by 381 employees at Commercial banks in Egypt, are shown in Table (1).

Table (1) Distribution of the Sample Size

Bank Type	Number of Population	Percentage	Sample Size
1. General Commercial Banks	52564	79%	382X 79% = 302
2. Joint Commercial Banks	11977	18%	382 X 18% = 69
3. Foreign Branches of Banks	1995	3%	382 X 3% = 11
Total	**66536**	**100%**	**382 X 100% = 382**

Source: Egyptian Central Bank, Economic Magazine, 2020

Table (2) Frequency Distribution Table of Demographics

Demographic Variables		Number	Percentage
1- Job Title	General Manager	24	%8
	Deputy General Manager	15	%5
	Deputy Manager	18	%6
	Controller	30	%10
	Excellent Banker	57	%19
	Banker A and B	156	%52
	Total	**300**	**100%**
2- Marital Status	Married	210	%70
	Single	90	%30
	Total	**300**	**100%**
3- Age	Less than 30 years	120	%40
	From 30 to 45	135	%45
	More than 45	45	%15
	Total	**300**	**100%**
4- Educational Level	University Education	135	%45
	Post Graduate Studies	165	%55
	Total	**300**	**100%**
5- Period of Experience	Less than 5 years	60	%20
	From 5 to 10	210	%70
	More than 10	30	%10
	Total	**300**	**100%**

7. Procedure

The goal of this study was to identify the role of BI in enhancing SI. A survey research method was used to collect data. The questionnaire included four questions, relating to BD, BI, OP, and biographical information of employees at Commercial banks in Egypt. About 382 survey questionnaires were distributed. Multiple follow-ups yielded 300 statistically usable questionnaires. Survey responses were 78%.

8. Research Variables and Methods of Measuring

The 15-item scale BI section is based on Torres et al., 2018; Knabke & Olbrich, 2017; Yeoh & Popovič, 2015; Sangari & Razmi 2015; Cosic et al., 2012. There were five items measuring technology, five items measuring people, and five items measuring strategic alignment.

The 29-item scale SI is based on Maccoby, 2001; 2004; Maccoby & Sucdder, 2011. There were six items measuring foresight, six items measuring system thinking, six items measuring future vision, six items measuring ability to motivate workers, and five items measuring partnership.

Responses to all items scales were anchored on a five (5) point Likert scale for each statement which ranges from (5) “full agreement,” (4) for “agree,” (3) for “neutral,” (2) for “disagree,” and (1) for “full disagreement”.

9. Data Analysis and Hypotheses Testing

9.1. Coding of Variables

The research consists of three variables. The first is (independent variable). The second is BI (independent variable). Description and measuring of the research variables is presented in the following table:

Table (3) Description and Measuring of the Research Variables

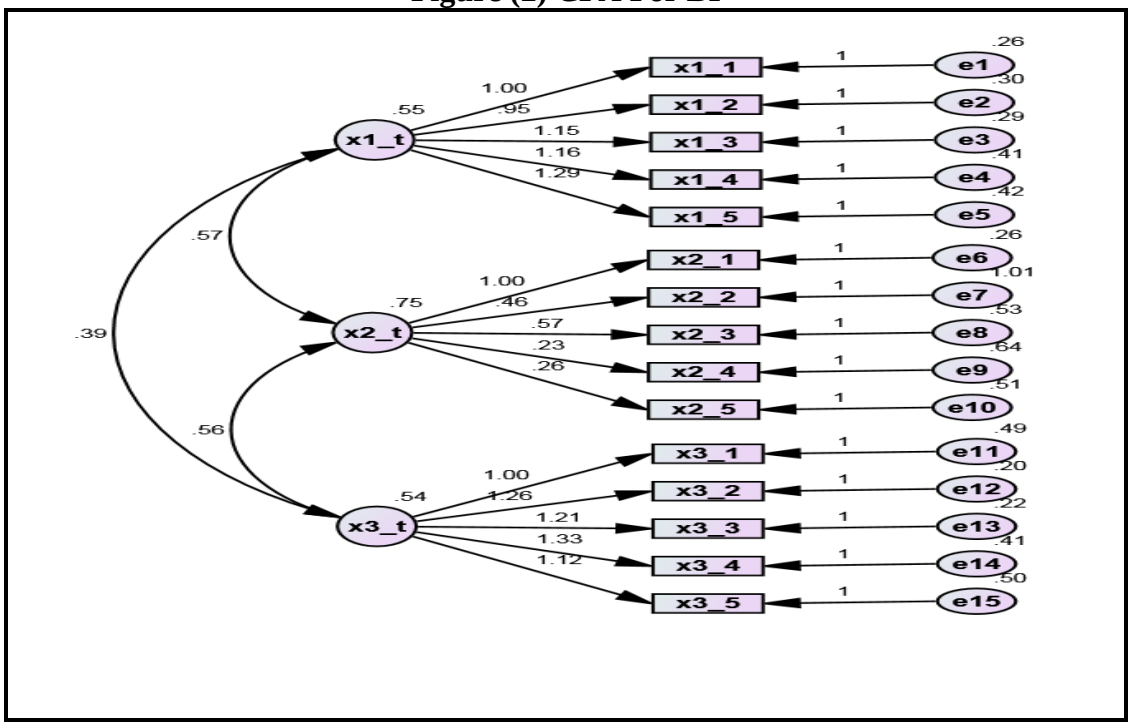
Main Variables		Sub-Variables	Number of Statement	Methods of Measuring Variables
Independent Variable	Business Intelligence	Technology	5	Torres et al., 2018; Knabke & Olbrich, 2017; Yeoh & Popovič, 2015; Sangari & Razmi 2015; Cosic et al., 2012
		People	5	
		Strategic Alignment	5	
Total BI			15	
Dependent Variable	Strategic Intelligence	Foresight	6	Maccoby, 2001; 2004; Maccoby & Sucdder, 2011
		System Thinking	6	
		Future Visioning	6	
		Motivation	6	
		Partnership	5	
Total BD			**29**	

9.2. Construct Validity

9.2.1. Business Intelligence

The researcher used Confirmatory Factor Analysis (CFA) for BI. This can be illustrated by the following figure:

Figure (2) CFA For BI



From the previous figure, it is clear that all the statement of BI are greater than 0.50, which corresponds to GFI. This is a good indicator of all other statistical analysis. The quality indicators for BI can be illustrated in the following table:

Table (4) Quality Indicators for BI Using AMOS Analysis

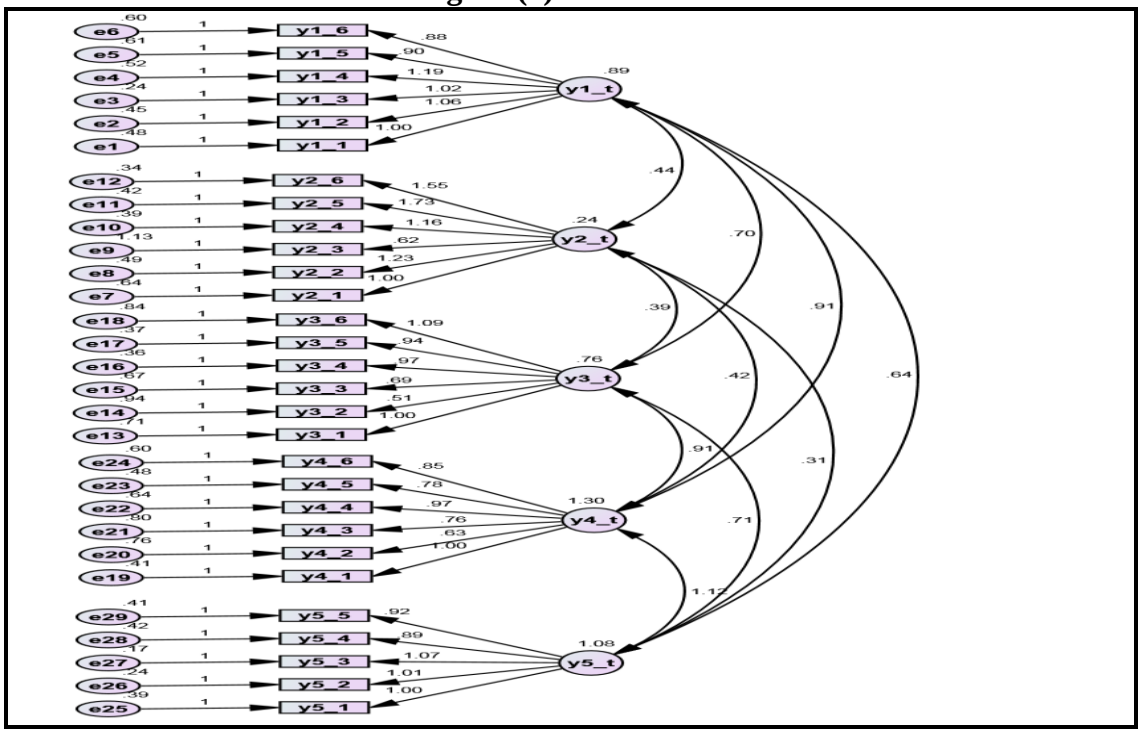
Test the Quality of the Model Acceptance Condition (Daire et al., 2008)	Test Value
X^2 / Degree of freedom >5	868.531
P. value > 0.5	0.000
Goodness of fit Index (GFI) > 0.90	0.747
Tuker-Lewis Index (TLI) > 0.95	0.720
Comparative Fit Index (CFI) > 0.90	0.768
Normed Fit Index (NFI) > 0.90	0.750
Incremental Fit Index (IFI) > 0.95	0.769
Relative Fit Index (RFI) > 0.90	0.698
Root Mean Square Residual (RMR) < 0.5	0.080
Root Mean Square Error of Approximation (RMSEA) < 0.5	0.173

In light of the above-mentioned indicators, it is clear that the previous indicators are good for making all other statistical analysis.

9.2.2. Strategic Intelligence

The researcher used CFA for SI. This can be illustrated by the following figure:

Figure (3) CFA For SI



According to Figure (2), it is clear that all the statement of SI are greater than 0.50. This is a good indicator of all other statistical analysis. The quality indicators for SI can be illustrated in the following table:

Table (5) Quality Indicators for SI Using AMOS Analysis

Test the Quality of the Model Acceptance Condition (Daire et al., 2008)	Test Value
X^2 / Degree of freedom < 5	2963.968
P. value > 0.5	0.000
Goodness of fit Index (GFI) > 0.90	0.584
Tuker-Lewis Index (TLI) > 0.95	0.670
Comparative Fit Index (CFI) > 0.95	0.701
Normed Fit Index (NFI) > 0.90	0.674
Incremental Fit Index (IFI) > 0.95	0.703
Relative Fit Index (RFI) > 0.90	0.640
Root Mean Square Residual (RMR) < 0.5	0.111

Root Mean Square Error of Approximation (RMSEA) < 0.5	0.154

In light of the above-mentioned indicators, it is clear that the previous indicators are good for making all other statistical analysis.

9.3. Descriptive Analysis

Table (6) shows the mean and standard deviations of BI and SI

Variables	The Dimension	Mean	Standard Deviation
Biasness Intelligence	Technology	4.08	0.860
	People	4.06	0.585
	Strategic Alignment	3.79	0.911
	Total Measurement	**3.95**	**0.693**
Strategic Intelligence	Foresight	3.59	0.898
	System Thinking	3.89	0.678
	Future Visioning	3.82	0.833
	Motivation	3.57	1.006
	Partnership	3.30	1.053
	Total Measurement	**3.64**	**0.804**

According to Table (6), most of the respondents identified technology (M=4.08, SD=0.860), people (M=4.06, SD=0.585), strategic alignment (M=3.79, SD=0.911), and total BI (M=3.95, SD=0.693).

Regarding to SI, most of the respondents identified the foresight (M=3.59, SD=0.898), system thinking (M=3.89, SD=0.678), future visioning (M=3.82, SD=0.833), motivation (M=3.57, SD=1.006), partnership (M=3.30, SD=1.053), and total SI (M=3.64, SD=0.804).

9.4. Evaluating Reliability

Table (7) Reliability of BI and SI

Variables	Dimension	Number of Statement	ACC
Business Intelligence	Technology	5	0.906
	People	5	0.635
	Strategic Alignment	5	0.909
	Total Measurement	**15**	**0.923**
Strategic Intelligence	Foresight	6	0.915
	System Thinking	6	0.783
	Future Visioning	6	0.838
	Motivation	6	0.896
	Partnership	5	0.941
	Total Measurement	**29**	**0.964**

Table (7) presents the reliability of BI. The 15 items of BI are reliable because the ACC is 0.923. Technology, which consists of 5 items, is reliable because the ACC is 0.906. The 5 items related to people are reliable because the ACC is 0.635. The 5 items related to strategic alignment are reliable because the ACC is 0.909. Thus, the internal consistency of BI can be acceptable.

The 29 items of SI are reliable because the ACC is 0.964. Foresight, which consists of 6 items, is reliable because the ACC is 0.915. The 6 items related to system thinking are reliable because the ACC is 0.783 while the 6 items of future visioning are reliable because the ACC is 0.838. The 5 items related to motivation are reliable because the ACC is 0.896 while the 5 items of partnership are reliable because the ACC is 0.941. Thus, the internal consistency of SI can be acceptable.

9.5. The Means, St. Deviations and Correlation among Variables

Table (8) Means, Standard Deviations and Intercorrelations among Variables

Variables	Mean	Std. Deviation	BI	SI
Business Intelligence	3.95	0.693	1	
Strategic Intelligence	3.64	0.804	0.833**	1

Table (8) shows correlation coefficients between BI and SI. BI is (Mean=3.95; SD=0.693), while SI is (Mean=3.64; SD= 0.804). Also, the correlation between BI and SI is (R=0.833; P <0.01).

9.6. The Correlation between BI and SI

Table (9) Correlation Matrix between BI and SI

Research Variables	1	2	3	4
Technology	1			
People	0.591**	1		
Strategic Alignment	0.697**	0.677**	1	
Strategic Intelligence	0.764**	0.628**	0.777**	1

Based on Table (9), correlation between BI (Technology) and SI is 0.764 whereas BI (people) and SI shows correlation value of 0.628. Also, BI (strategic alignment) and SI is 0.777. The overall correlation between BI and SI is 0.777.

9.6.1. Business Intelligence (Technology) and SI

Table (10) MRA Results for Business Intelligence (Technology) and SI

Business Intelligence (Technology)	Beta	R	R^2
1. BI system uses accurate, error-free data.	0.103	0.620	0.384
2. BI system provides reports for taking quick action to tackle everyday problems.	0.099*	0.581	0.337
3. BI system analyzes historical data to identify trends and detect problems.	0.147*	0.658	0.432
4. BI system has the ability to display information as requested by the system user.	0.174	0.674	0.454
5. BI system has the ability to integrate with other information systems.	0.366	0.718	0.515
▪ MCC ▪ DC ▪ Calculated F ▪ Degree of Freedom ▪ Indexed F ▪ Level of Significance	0.773 0.597 87.286 5, 294 3.01 0.000		

As Table (10) proves, the MRA resulted in the R of 0.773 demonstrating that the 5 independent variables of BI (Technology) construe SI significantly. Furthermore, the value of R^2, 5 independent variables of BI (Technology) can explain 0.59% of the total factors in SI level. Hence, 41% are explained by the other factors. Therefore, there is enough empirical evidence to reject the null hypothesis that it said there is no relationship between BI (Technology) and SI.

9.6.2. Business Intelligence (People) and SI

Table (11) MRA Results for Business Intelligence (People) and SI

Business Intelligence (People)	Beta	R	R^2
1. The management of the organization encourages the use of the BI system by the various administrative levels.	0.571**	0.694	0.481
2. The management of the organization is interested in making operational improvements through the use of the BI system.	0.044	0.263	0.069
3. The employees in the BI system have the appropriate technical skills.	0.208**	0.488	0.238
4. The BI system workers have the ability to provide appropriate solutions.	0.133*	0.278	0.077
5. The organization provides appropriate training programs for users of the BI system in a timely manner.	0.042	0.257	0.066
▪ MCC ▪ DC ▪ Calculated F ▪ Degree of Freedom ▪ Indexed F ▪ Level of Significance	0.732 0.535 67.771 5, 294 3.01 0.000		

As Table (11) proves, the MRA resulted in the R of 0. 732. This means that SI has been significantly explained by the 5 independent variables of BI (people). As a result of the value of R^2, the five independent variables of BI (people) justified 53% of the total factors in SI level. So, there is enough empirical evidence to reject the null hypothesis that it said there is no relationship between BI (people) and SI.

9.6.3. Business Intelligence (Strategic Alignment) and SI

Table (12) MRA Results for Business Intelligence (Strategic Alignment) and SI

Business Intelligence (Strategic Alignment)	Beta	R	R^2
1. The organization takes into account the restructuring of BI processes to adapt to the available opportunities.	0.387**	0.685	0.469
2. The organization takes into account restructuring the operations of the operational divisions in order to cope with the available opportunities.	0.090	0.637	0.405
3. The organization takes into account that BI applications are compatible with the needs of operational management.	0.126*	0.626	0.391
4. The organization takes into account that BI applications are compatible with the objectives of the operational management.	0.255**	0.693	0.480
5. The organization is keen that BI is concerned with generating information from it.	0.264**	0.685	0.469
▪ MCC ▪ DC ▪ Calculated F ▪ Degree of Freedom ▪ Indexed F ▪ Level of Significance	0.803 0.645 106.617 5, 294 3.01 0.000		

As Table (12) proves, the MRA resulted in the R of 0.803 demonstrating that the 5 independent variables of BI (strategic alignment) construe SI significantly. Furthermore, the value of R^2, 5 independent variables of BI (strategic alignment) can explain 0.64% of the total factors in SI level. Hence, 36% are explained by the other factors. Therefore, there is enough empirical evidence to reject the null hypothesis that it said there is no relationship between BI (strategic alignment) and SI.

10. Research Results

10.1. Research Results Related to BI

1. Commercial banks in Egypt do not rely on BI applications and technologies as a repository of data and immediate analytical processing. Perhaps this is due to the low knowledge of workers about these applications as one of the directions that beneficiaries must deal with.
2. Commercial banks in Egypt operate in a competitive framework, represented by other organizations operating in the Egyptian environment, which makes the organization's environment suitable for using BI and competitive intelligence applications.
3. The low level of the Commercial banks in Egypt infrastructure to deal with the field of software that supports BI. Perhaps this is due to tendency to deal with technologies that work to accomplish the traditional activities of the organization.
4. The interest in BI was limited to certain aspects, the most important of which is the use of BI in reviewing and completing operations within the organization, while the lesser concerns were related to various aspects, the most important of which is cooperation with individuals inside and outside the organization, and the search for new knowledge, and allowing individuals to learn in multiple locations. Perhaps this is due to the leaders 'lack of interest in adopting BI in the completion of activities and processes within the organization, in addition to the lack of technical personnel necessary to manage and operate BI systems in the organization.
5. Attention has been focused on the practice of BI in specific aspects, the most important of which is the focus on ensuring that workers in the organization understand the importance of BI for the success of the organization and considering this concept as part of the organization's culture. Therefore, the organization focused on the need to support the top management in achieving the role of BI in the success of the organization. As for the aspects that received a lesser level of attention, they were

represented in the organization's management expecting a high level of participation in the development and exchange of experiences in the field of BI.

6. The interest of Commercial banks in Egypt in the vital role played by BD technology and BI in transforming data into information, which is the first step in knowledge management, as well as the extent of organizations 'interest in all methods and procedures related to improving performance of Commercial banks in Egypt.
7. Commercial banks in Egypt use data from a variety of sources, and that is why organizations are keen to use BD technology to link their various data sources, store them, and facilitate the speed of their analysis, with the aim of studying them and making use of them in all the different work in the organization.
8. Commercial banks in Egypt adopt many data analyzes that help them in analyzing what happened in the past regarding customers in terms of their desires and needs, and predicting what will happen in the future.
9. Commercial banks in Egypt seeks to improve the quality of the services they provide as a major factor in achieving customer satisfaction, as well as the desire to increase the size of their customers, which leads to a reduction in the cost of producing their services on the one hand, and the speed in delivering the service with the required specifications on the other hand.
10. There is a conviction from the operational management that BI plays an important role in improving and developing the operational performance in the organization, in addition to the interest of the operational management in the necessity and importance of effective use of BI in order to make the appropriate decision at the appropriate time.

10.2. Research Results Related to SI

1. With regard to the foresight dimension, Egyptian commercial banks rely on effective mechanisms in the process of extrapolating the future, possessing personal experience and ingenuity in facing changes in the environment in light of future scenarios developed by these banks.
2. Egyptian commercial banks have a clear interest in the dimension of organized thinking, and they have a clear perception about banks as a coordinated system, and they study ideas together, and this helps them to develop appropriate solutions to the problems they face.
3. Egyptian commercial banks have a clear interest in the dimension of the future vision in terms of being able to draw plans and activities in the performance of their business, how to derive their mission and goals from this vision, and how to convince others of this vision to achieve future goals.
4. With regard to the dimension of the ability to motivate employees, Egyptian commercial banks rely on reward and incentive systems in order to improve their performance, as well as motivate them to interact with each other and urge them to respond to future changes and take responsibility.
5. With regard to the partnership dimension, Egyptian commercial banks have a strong desire to establish partnerships with other banks, given that partnership is the solution to get out of the crises they face and help them reduce the risks they face.

11. Research Recommendations

11.1. Research Recommendations Related to BI

1. The necessity of attracting workers with experience and skill in dealing with BI techniques, as well as the possibility of developing workers in the technical field by directing them to participate in training courses in this field.
2. The use of the data warehouse as the most prominent techniques that provide analytical information through which administrative decisions are made, in addition to the analytical and immediate processing of the data and presenting it in an appropriate manner.
3. The necessity of integrating BI techniques in a manner that achieves the highest level of efficiency in exploiting and analyzing data, in order to achieve the highest level of decisions in light of the use of cost-benefit analysis.

4. Identify the applications of BI in organizations operating in the same field in order to benefit from them and achieve the highest levels of benefit in this field.
5. The need to pay attention to amending the services provided by banks to their customers, with the aim of making use of BI systems in developing the performance of employees, which leads to the survival, growth, and distinction of the banking sector while it is in the process of providing services to its customers.
6. The necessity to invest in all available resources in a manner that meets the needs and desires of customers on a daily basis, and to work on increasing and diversifying the services provided.
7. Interest in designing flexible organizational structures with which the organization's management can respond to the increasing changes in the market on the one hand, and strengthening its position in the application of BI systems on the other hand.
8. Work to form communication networks with academic institutions, whether universities, research centers or others, with the aim of getting acquainted with what is new in the field of BI systems and benefiting from them.
9. Conducting more studies and research in the field of BI and making use of it in developing, improving and diversifying the services provided by the organization.
10. The need for organizations to pay attention to employing BI tools in building strategic information systems and activating their role in all different areas in the organization.
11. Benefiting from the experiences of developed organizations and countries in building and employing BI tools and making use of available technologies, developing them and supporting them in a manner that leads to efficient and effective use of them.
12. The need for higher management in the organizations to pay attention to the mechanism of obtaining information from the various parties, so that this information is stored in the organization's storage warehouses after verification, collection and transfer so that the organization can use it well in all its decisions.
13. Increasing the interest of senior management in generating knowledge from employees and converting it into tacit knowledge, through which it is possible to achieve competitive excellence and excellence for the organization.
14. The need to pay attention to the causes of the decline in interest in the BI system by strengthening the relationships between all existing information systems in the organization, and choosing modern technology in collecting information, in addition to working to exploit the implicit knowledge possessed by workers in the organization, which leads to building learning organization.
15. The necessity of investing the progress made between the BI system in enhancing knowledge transfer processes on the basis that it is the main gateway to achieving the learning organization, by identifying the necessary resources for the development of the organization, and the optimal investment for the BI system in knowledge acquisition and sharing among users in a manner that allows the organization to diversify Its informational resources.
16. Increasing attention to the need to build the technical capabilities of individuals working in the field of information technology, through specialized training courses that increase their capabilities and skills in the field of BI technology.
17. The necessity and importance of spreading a culture of reliance on data among the organization's personnel in a manner that leads to the exploitation of the capabilities provided by both BD and BI in improving the performance of all different operations of the organization.
18. The necessity of holding training courses and workshops at the level of the operational departments in the organization in order to identify the importance of data and BI and their role in improving the operational performance of the organization.

11.2. Research Recommendations Related to SI

1. The necessity for Egyptian commercial bank managers to adopt the dimensions of SI in order to make strategic decisions, formulate policies and strategies and benefit from them, through the following:
   - Using forward-looking processes for environmental events in Egyptian commercial banks that could have a significant impact on organizational strategy, competitive action, and future performance.

- Focusing on the importance of organized thinking in Egyptian commercial banks, by establishing an educated organization whose mission is the ability to make rational and rational decisions.
- The necessity for Egyptian commercial banks to have a comprehensive future vision that is realistic and reliable in their work.
- Work on using the means and tools that perform basic work in pushing individuals towards work and motivating them by satisfying their needs and desires.
- The necessity of the Egyptian commercial banks 'interest in partnership and joint cooperation, and making strategic alliances to develop their business model.

2. Forming a SI unit whose mission is to provide Egyptian commercial banks with the required information, contribute to shaping their future, conduct assessments of the risks surrounding them, monitor the changes that affect them, and then assist their managers in taking the appropriate position towards them.
3. The need to pay attention to the development of SI among managers of Egyptian commercial banks through (1) special programs to enhance the culture of SI and enhance its role in decision-making, (2) to seek the help of experts specialized in the field of SI from abroad to train managers on how to use SI, and to employ it In the decision-making process, and ways to employ it in dealing with opportunities and threats, (3) the managers participating in these programs are granted a professional certificate in SI.
4. Egyptian commercial banks should work to attract good managers who have speculative, analytical and predictive capabilities by including questions within employment tests and interviews that examine the level of SI of job applicants. And that these banks pay attention to the process of organizational development in them, and to study and develop SI at all administrative levels.
5. The necessity of activating the partnership element for the purpose of exchanging experiences and information. These banks should not fear the exploitation of partners when entering into new projects. What reduces the fear of these banks is good preparation before entering into other partnerships.
6. The need to make SI part of the training program for senior management leaders in order to develop and refine the dimensions of SI in them so that it leads to all new decisions, strategies and plans in the long term and the continued focus and modernization of information technology due to its importance in providing information more quickly.
7. The necessity to encourage workers to exert more effort and creativity in exchange for incentives, and to pay attention to and encourage strategic partnerships with corresponding banks, due to their great positive impact on Egyptian commercial banks and their gaining competitive advantages that enhance their position and preserve them from the risks of environmental instability, and encourage administrative leaderships that have talent Reading the future towards developing the strategies of Egyptian commercial banks in the long run.
8. The necessity for Egyptian commercial banks to work on possessing strategic knowledge of all internal and external environmental aspects, in a way that contributes to drawing their future image of what the environmental conditions will lead to. This is in addition to the necessity for Egyptian commercial banks to rely on strategic knowledge generated from environmental analysis processes to determine appropriate SI.
9. The need for Egyptian commercial banks to rely on appropriate SI according to the data of the environmental analysis process, and their future knowledge without focusing on intuition and guesswork in an effort to preserve their market share, as SI may emerge as an ideal method in many market conditions and situations.
10. The necessity of Egyptian commercial banks 'endeavor towards adopting appropriate means to encourage the employees of the company, develop their expertise and upgrade their skills by adopting intensive and appropriate training programs that lead to raising the intelligence levels of workers in general and senior management in particular.
11. The need to increase managers 'awareness of the importance of developing services by entering into partnerships, in an effort to reduce the cost that these banks bear in the event that they are developed by relying on their own capabilities, since one of the biggest costs that business organizations bear is the costs of development, In addition to the lack of guaranteed returns from behind it.
12. The necessity for Egyptian commercial banks to strengthen the spirit of cooperation among their employees, as workers feel a certain isolation and not feel the existence of a family atmosphere, and the

reason for this may be their preoccupation with work while bearing serious responsibilities because they are performing very sensitive work.

13. The necessity for Egyptian commercial banks to increase confidence in their managers, given that they possess high-level administrative capabilities and skills in terms of their expertise, given that they have appropriate expertise, but the problem is in their low interest in innovators, which is a basis for innovation, as well as lack of diversification in tasks and duties. Assigned to the workers.
14. The necessity for Egyptian commercial banks to prepare all the necessary requirements for the effective implementation of the defined strategy, and this includes the redistribution of powers between departments to ensure a rapid response to environmental changes. This is in addition to the necessity of reviewing and evaluating the skills of managers working in Egyptian commercial banks in the field of implementing the specific strategy to contribute to reducing implementation problems to the lowest level.

12. Future Studies

The present study attempts to reveal the dimensions of BD and its impact on the dimensions of the BI, but the scope of this study, the methods used and its findings indicate that there are areas for other future studies.

Among these research areas are (1) the impact of BD on BI in different sectors, (2) the effect of BI on SI, (3) the impact of BI on organizational excellence, (4) the impact of BI on strategic success, (5) the impact of BI on organizational prowess, (6) the role of BD and BI in improving operational performance, (7) the role of SI in facing crises, (8) The role of SI in human capital management, (9) the relationship between SI and some other concepts such as strategic thinking, strategic management, (4) the reality of SI in the banking sector (10) the impact of SI in achieving institutional excellence, (11) The role of strategic knowledge in enhancing SI.

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