

Investigate the Mediating Role of Business Intelligence on the Relationship Between Critical Success Factors for Business Intelligence and Strategic Intelligence

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ABSTRACT This study aims to investigate the mediating role of business intelligence in the relationship between critical success factors for business intelligence and strategic intelligence in the era of the COVID-19 epidemic. The data acquired from a sample of 392 managerial positions from Jordanian commercial banks was examined using a multi-regression analysis in SPSS. This study's findings came in agreement with the notion that business intelligence boosts the link between CSF for BI and strategic intelligence. The study's findings have clues for both the current body of literature and decision-makers. Hence, businesses that have embraced BI understand the advantages of improving their strategic intelligence skills and decision-making procedures during the COVID-19 outbreak.

KEYWORDS: Business Intelligence, Critical Success Factors For Business Intelligence, Strategic Intelligence, Jordan

1. INTRODUCTION

The rapidly changing environment and the massive data around us possess a logical need to manipulate it and make decisions which directly related to the business survival (Turban et al., 2010). One way that organizations can obtain competitive advantage is leverage the IT capabilities with intelligence technologies (Awamleh & Bustami, 2022). Also, the current advancement in IT and technology has shorten life-cycle of the businesses consequently, the organizations have no choice but to have intelligent decision-making to gain

competitive advantages (Kalyani, 2019). Real time and the right data is what make the decision-making reliable (Farjami & Molanapour, 2015). Here where business intelligence is vital as it is the right tool handle massive amount of data in order to figure the patterns and mine trends which support the organizations when it comes to decision-making (Raisinghani, 2003).

Strategic intelligence allows organizations to design appropriate strategies based on the predicted variations through processing useful information from their external and internal business environments. Hence, generate value and build profitability growth in the new

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markets (Marchand & Hykes, 2007). The significant of strategic intelligence originate from its ability to help firms develop innovation, define creative transformation strategies, make beneficial choices as well as gain an advantage over competitors (Abuzaid, 2017). The business intelligence system require rigorous set of factors to ensure the utmost return of investment and ensure that the good quality of output. As (Yeoh et al., 2007a) puts it, avoiding bad decisions leads to increasing the return on investment in business intelligence schemes.

One way that enable organizations to success is to integrate intelligence applications. To do this, they need to adopt intelligent information systems which process, analyze their environment, and feed the results to strategic intelligence. Hereafter, input data for strategic planning and decision-making. This will boost the businesses and organizations chance to thrive and steadily advance (Johannesson & Palona, 2010).

The less the data integration, the more business processes become dispersed and poorly defined. This leads to poor information availability owing to a variety of user interface designs, which in turn leads to less effective decision-making (Davenport, 1998). Consequently, CSFs are what determine whether BI systems are successful or not in companies (Chenoweth et al., 2006; Johnson, 2004; H. Xu & Hwang, 2005), which will determine the success or failure in providing input to intelligence schemes. This type of integration is missing within the current literature, relatively few studies are conducted on the topic of assessing the role of BI and the way it's adopted generally (Hawking & Sellitto, 2010).

Several studies have been done on critical success factors (Eryadi & Hidayanto, 2020; Hawking & Sellitto, 2010; Jahantigh et al., 2019; Olszak & Ziemba, 2012; Pellissier & Kruger, 2013; Pham et al., 2016; Yeoh & Popovič, 2016). Another stream of literature on Business intelligence (Alatqi, 2022; Alnoukari & Hanano, 2017; Al-Okaily et al., 2022; Awawdeh et al., 2022; Binzafrah & Taleedi, 2022; Fatima & Linnes, 2019; GhalichKhani & Hakkak, 2016; Heang & Mohan, 2017; Kalyani, 2019; Paulino, 2022; Pirttimäki et al., 2006; Raisinghani, 2003; Smith & Crossland, 2008; Turban et al., 2010) and strategic intelligence (Abuzaid, 2017; Alnoukari & Hanano, 2017; Esmaeili, 2014; Marchand & Hykes, 2007), there is non about the integration between these concepts. The current study proposed a conceptual

framework to study the integration between CSFBI, BI, and SI in Jordanian banks.

Jordan is a stable country with IT-enabled infrastructure and the right talent to deal with an intelligent system. Jordanian banks are operating in a digital domain and produce a massive amount of data. Consequently, they're profoundly invested in business intelligence to aid in handling their data (Al-Okaily et al., 2022). A fair share of studies about the intelligent system has been conducted in Jordan which proves the suitability of this study's context (Abuzaid, 2017; Al-Daouri & Atrach, 2020; Alkharabsheh & Al-Sarayreh, 2022; Al-Okaily et al., 2022; Alomian & Alsawalhah, 2019; Alzeaideen, 2019; Hamour, 2021; Jaradat et al., 2022; Malkawi, 2018; Rahahleh & Omoush, 2020; Shannak & Obeidat, 2012).

The rest of the current paper is organized as follows: Present the review of the body of literature first, followed by the research's technique. Afterward, the analysis and findings discussion are provided. Lastly, the study's outcomes with the research's practical and theoretical consequences are presented.

2. LITERATURE REVIEW

2.1 Theoretical framework

2.1.1 CSFBI

Several definitions of CSFs may be found in the literature. CSFs are described by (Yeoh et al., 2007a) as crucial areas where success is required for the business to develop, ensuring beneficial competitive performance for the firm. In other words, if the outcomes of these extents are inadequate, the company's endeavors for the specified duration would be, indeed, futile (Pham et al., 2016). CSFs are described as criteria that an organization or project must fulfill in order to achieve its objectives. The CSFBI are components of business intelligence that impact the effective adoption of business intelligence solutions in organizations.

Several studies have looked into CSFs for deploying BI systems as a standalone idea in a specific setting (Kfoury & Skyrius, 2016; Olszak & Ziemba, 2012; Pellissier & Kruger, 2013; Pham et al., 2016). Various dissemination studies, such as the one done by (Yeoh, 2011) focused on other aspects of implementation, such as the role of CSFs in BI system deployment. Additionally, (Yoon et al., 2017) found that incentive to learn the BI application

affected individual intention, and another study (Yeoh & Koronios, 2010) looked at organizational determinants. Numerous empirical studies on CSFBI have been conducted (Dawson & van Belle, 2013; Hawking & Sellitto, 2010; Olbrich & Poppelbuß, 2012; Yeoh et al., 2007b; Yeoh & Koronios, 2010). According to these studies, the most essential CSFs are dedicated “top management support, source system data quality, and user participation”.

2.1.2 Business Intelligence

Business intelligence is labeled as transforming data into useful information and knowledge using mathematical models and analytical methodologies in order to improve and aid strategic planning. In other words, it is using applications and procedures to manipulate data to aid decision-making (Davenport, 1998; Wixom & Watson, 2010). Along with current technology advancements, BI is in high demand because of its ability to meet the expectations of customers (Nithya & Kiruthika, 2020).

The literature defines three perspectives on BI use and success: an organizational perspective that represents organizational objectives, strategies, and plans; an information systems (IS) perspective that represents IT infrastructure and user interface; and a users' perspective that includes human resource capabilities (Ul-Ain et al., 2019). A fourth approach, the macro-environmental perspective, which covers the external environment such as market impacts, is being debated (Lautenbach et al., 2017). However, because the macro-environment is undefinable, it is uncapturable and will be excluded from this research. For this study, three viewpoints of (Salisu et al., 2021) will be considered to build the study's instrument.

The present literature stream has mostly concentrated on the organizational and information technology perspectives, as opposed to the user viewpoint, which has received less attention but offers greater projections for future study (Ul-Ain et al., 2019). Furthermore, there is a scarcity of research that thoroughly covers organizational IS and user viewpoints. There is a tendency in the bulk of articles from 2000 to 2019, where the attention is split between BI success and BI use and adoption. However, success is dependent on users' consistent usage of BI systems (Ul-Ain et al., 2019).

As for the theory that backed BI, the UTAUT has incorporated aspects such as social influence, which influences behavioral intention. Furthermore, it identified enabling factors as a factor influencing behavioral intention to

identify whether an existing organizational and technological infrastructure to employ technology existed (Venkatesh et al., 2003). Several earlier investigations employed UTAUT to explain BI (Hou, 2014; Kester & Preko, 2015).

2.1.3 Strategic Intelligence

Strategic intelligence is defined as the act of gathering and interpreting data from the environment in order to formulate an organization's strategy (Kuosa, 2011). Organizational standards, financial and tax activities, political and economic breadth, and human resource classifications are all part of strategic intelligence. Strategic intelligence, in other words, investigates and analyses an organization's whole social, political, and economic activities. When analyzing strategic intelligence, numerous variables must be considered, including “the strategic vision, human and social resources, and the organization's economic and political concerns” (Gabber, 2007).

Strategic intelligence, in particular, depends on an organization's strategic planning framework and strategic decision-making. An additional definition of strategic intelligence views it as a widely related concept to organizational intelligence, organizational strategies, organizational strategic resources, and strategic management (Richard, 2007). Academics agree that “strategic intelligence” is a broad and multifaceted concept with no definite or certain definition (Maccoby (2011); Coccia (2010); Tesaleno (2010)). Rendering to books, articles, and research outlines, the effective factors of strategic intelligence are “human resource intelligence, organizational process intelligence, information intelligence, financial resource intelligence, technological intelligence, competitors intelligence, and customers intelligence” (Karl Weick, 2001) (Kruger, 2010).

Prior studies on strategic intelligence have primarily focused on the process (information collecting, analysis, and distribution) and have been less concerned with its components. Hosseini et al. (2012) provided a methodology for evaluating strategic intelligence in businesses using IT, whereas Kuosa (2011) focused on the usage of strategic intelligence in businesses. Coyne and Bell researched the importance of strategic intelligence in estimating organized offenses and crimes (2011). Companies, on the other hand, must have strategic advantages, transferrable experiences, changing phases inside the company, and information collection in order to construct a strategic intelligence system. Sigismund (1979).

Strategic intelligence has been studied in a model that echoes most of Kaplan and Norton's balanced and privileged card. This model's aspects include prediction, supervision, patterning, motivation, and empowerment Maccoby (2011). Strategic intelligence is also looked at from a strategic planning angle. In cooperation with Aboee Ardakani and Abasi, Andrew (1985) proposed an integrated technique for information-age changes based on the protection framework. Another research by Rezaiean and Lashkar looked at strategic decision-making as the dependent variable (2010).

2.2 “Hypothesis Development and Theoretical Linkages”

2.2.1 CSFSBI and Business Intelligence

Several studies have looked into CSFs while deploying BI systems, including Olszak and Ziembra (2012), Kfoury (2016), Dawson and Van Belle (2013), and Pham et al. (2016), Eryadi and Hidayanto 2020. Based on the conclusions of the preceding research, the success of BI systems may be secured by properly analyzing and focusing on the aspects that may affect the BI system's performance. Understanding the CSFs helps BI stakeholders to alter their resources, efforts, and focus on the areas most likely to support the BI system's successful implementation (Yeoh & Koronios, 2010).

Researchers have discovered some common characteristics that are crucial to the success of BI programs. The term “Critical Success Factors” refers to a wide range of influences, including “top management support, market dynamics, data quality of source systems, and BI technology utilisation” (Adamala & Cidrin2011). Considerable empirical research on CSFs in BI have been conducted and they consistently revealed that user engagement, source system data quality, and committed top management support were the most critical CSFs (Yeoh et al. 2007; Hawking & Sellitto 2010; Yeoh & Koronios 2010; Olbrich et al. 2012; Presthus et al. 2012).

Implementing BI systems is a complex process that involves the usage of proper infrastructure and a convince amount of resources over time, rather than just acquiring the application or tool (Yeoh and Koronios, 2010). It is critical to identify the CSFs in the process of managing and implementing IT, particularly in the case of business intelligence. The project will achieve its objectives if certain specified

events occur that are critical to its success and negative impacts are kept to a minimal. These elements include, “among others, managerial difficulties, changing needs and objectives, organisational and personnel challenges, team issues, project planning and scheduling, data quality, and security”. As a result, the following possibilities are proposed:

H1: CSF for BI has a positive association with Business Intelligence during the COVID-19.

2.2.2 Business Intelligence and Strategic Intelligence

“Business intelligence, competitive intelligence, and knowledge management” that are embedded within strategic intelligence, considered enablers of transforming the collective data and intellectual properties into one structured and intelligent body of information that support decision-making processes as well as strategic planning and management Pellissier and Kruger (2013). (MouhibAlnoukaria and Abdellatif Hananoa 2017) have made an attempt to broaden the research in the BI and strategic intelligence domains by defining the linkages between business intelligence and strategic management. It has also shed light on business intelligence's significance in corporate performance management and strategic intelligence. As a result, the second hypothesis might be stated as follows:

H2: Business intelligence has a positive association with strategic intelligence during the COVID-19 Pandemic.

2.2.3 CSF for BI and Strategic intelligence

Pellissier and Kruger investigated the long-term insurance industry empirically (2013). They concentrated on a subset of business intelligence known as strategic intelligence applications. Their study revealed a lack of awareness as well as ineffective use of cognitive capacities. They advocated utilizing strategic intelligence framework to steer intelligence operations in order to manage complexity and gain the utmost benefits of strategic intelligence, which increased innovation, competitive advantage, and decision-making. All potential relationships between CSF for BI and strategic Intelligence elements are evaluated while developing the first hypothesis:

H3: CSF for BI has a positive association with strategic intelligence during the COVID-19 Pandemic.

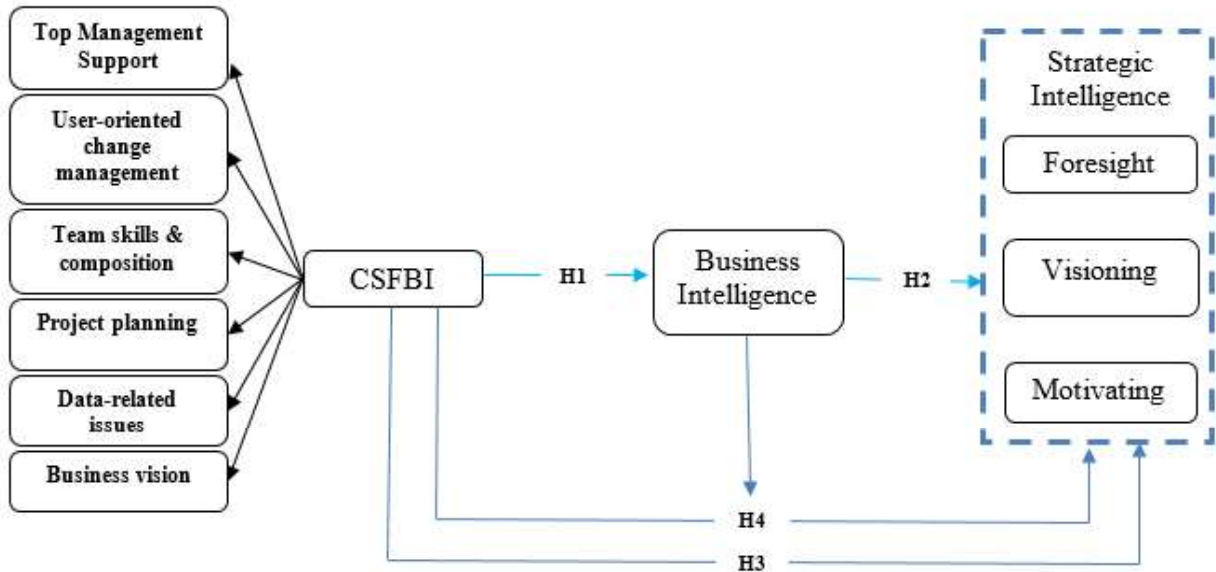


Figure 1. Research model during the COVID-19 Pandemic.

2.2.4 Hypothesis Scenery

This study's theoretical framework depicts a hypothetical sort of link between CSFBI and strategic intelligence, as well as the mediating function of BI. It is based on the existing level of knowledge in the literature and attempts to contribute to it by filling a gap with an explanation of the linkages between the study's parts and how it would aid businesses during the coronavirus outbreak.

3. METHODOLOGY

3.1 Study Participants

The people of the study consists of 13 commercial banks in Jordan while the sample consists of 392 managerial positions from commercial banks in Jordan. The "random method" method was used by a sample of administrative employees in commercial banks in Jordan.

Banks	Position	Frequency	Percentage (%)
"Arab Bank"	"Managerial Employee"	35	8.93
"The Housing Bank For Trade And Finance"	"Managerial Employee"	31	7.91
"Bank Of Jordan"	"Managerial Employee"	29	7.40
"Capital Bank Of Jordan"	"Managerial Employee"	28	7.14
"Jordan Ahli Bank"	"Managerial Employee"	32	8.16
"Cairo Amman Bank"	"Managerial Employee"	29	7.40
"Bank Al Etihad"	"Managerial Employee"	33	8.42
"Jordan Commercial Bank"	"Managerial Employee"	28	7.14
"Arab Jordan Investment Bank"	"Managerial Employee"	29	7.40
"Arab Banking Corporation /(Jordan)"	"Managerial Employee"	31	7.91
"Jordan Kuwait Bank"	"Managerial Employee"	30	7.65
"Invest Bank"	"Managerial Employee"	29	7.40
"Societe Generale De Banque – Jordanie"	"Managerial Employee"	28	7.14
Total	"Managerial Employee"	392	100

3.2 Measures

The questionnaire was developed based on recent studies, namely (Abuzaid, 2017; Paulino, 2022; Adjie Eryadi & Nizar Hidayanto, 2020; Yeoh & Popovič, 2016). Hence, it adds up to more valid and reliable device to collect the data. The following is the current study's tool in detail.

3.2.1 CSFBI

This research looks at six CSFBI dimensions: "top management support, user-oriented change management, team skills and composition, project planning, data-related difficulties, and business vision". Many studies have backed it, the most relevant of which are (Adjie Eryadi & Nizar Hidayanto, 2020; Yeoh & Popovič, 2016). As a result, The first section, was designed with questions that can be answered on a 7-point Likert scale taking "1" as strongly disagree and "7" as strongly agree.

3.2.2 Business Intelligence

The five questions used to assess business intelligence were backed by several studies, the most recent of which are (Paulino, 2022). The scale questions formulated based on 5-point Likert with "1" indicating severe disagreement and "5" indicating strong agreement.

3.2.3 Strategic Intelligence

In terms of strategic intelligence, three dimensions were evaluated, which were labeled as (Foresight, Visioning, and Motivating) and have been verified by various previous studies, the most notable of which are (Abuzaid, 2017). As a result, a 5-point Likert scale was utilized, with "1" indicating severe disagreement and "5" indicating strong agreement.

3.3 Design

The nature of this study is a descriptive and analytical study based on comparing previous studies and developing a new idea in the social sciences. The questionnaire method is then used to collect data from the target population to generate valuable results that might enrich the previous literature with a contribution to the knowledge. The random probability sample of the participants was used to get the most accurate results in this study (Sekaran & Bougie, 2016). During, the pilot phase, data has obtained from 33 administrative staff samples in commercial banks in Jordan to ensure that

the questionnaire is understood thoroughly by this study's sample.

3.4 Statistical analysis

There were 392 questionnaires completed and were ready for analysis. The researchers utilized "SPSS 25 software" to analyze data and calculate. Where demographic variables were used and several tests were conducted that confirm reliability, validity, normal distribution, and averages. Upon ensuring the integrity of the study data, the study questions were examined using multiple regression to answer the questions and verify the degree of influence in the study question. Finally, the mediating role testing was conducted via "PROCESS Macro version 3.5 software by Andrew F. Hayes" using SPSS to measure the direct and indirect effect among the study variables.

3.5 Results

3.5.1 "Summary statistics and internal validity of bivariate correlations"

The results of the internal validity among the variables of the study showed that there is no linear correlation between the variables because the correlation of the variable with itself is higher than any other variable (Sekaran & Bougie, 2016; Hair et al., 2014). The statistical significance was $p < .01$ & $p < .05$, which indicates the independence of the data and its non-interference. In addition, there is no weakness in the relationship between the variables, and there is no similarity in the data because the values range from 0.20 to 0.90, which confirmed the integrity of the data and the non-overlap of the variables, which made the study achieve the highest level of validity.

3.5.2 Tests of Reliability, Normality, Multicollinearity, Descriptive statistics

The reliability test shows that for CSFBI number of items is 15 and reliability is ($\alpha = 0.96$), for Business Intelligence number of items are 5 and reliability is ($\alpha = 0.86$), and strategic Intelligence's number of items is 15 with reliability ($\alpha = 0.94$). collectively, the overall percentage of all variables' number of items is 35 and reliability is ($\alpha = 0.97$). These figures show where the reliability ratio exceeded 70% for all elements of the study, which proved a high degree of reliability for the study variables (Hair

et al., 2014). The normality test illustrated that the variables in the study are between ± 2.58 , which proves all the study variables have been distributed naturally (Hair et al., 2014). According to (Sekaran & Bougie, 2016), the test of multicollinearity statistics clarified VIF test should be “VIF = < 5” which indicates VIF test has been proven that it did not suffer from any problem with multicollinearity.

The effect of the study questions was measured using a descriptive analysis to response of the managerial employees in 13 commercial banks in Jordan, and It concluded that the respondents responded with a high degree in the all variables of the study is between 5.35

and 4.46. As for the Standard Deviation, it is between 1.42 and 1.04 according to 7 points Likert scale which indicates high arithmetic for CSFBI dimensions, while for business intelligence is 3.90, and the Standard Deviation is 0.68 according to 5 points Likert scale which indicates the high arithmetic of business intelligence. Finally, The descriptive mean for strategic intelligence is between 3.95 and 3.60, and the Standard Deviation is between 0.84 and 0.71 according to 5 points Likert scale which indicates the high arithmetic of strategic intelligence dimensions. These results came from the perspective of the respondents to the study questions.

Table 1. Summary statistics of the internal validity of bivariate correlations.

Variable	TMS	UOCM	TSC	PP	DRI	BV	SIF	SIV	SIM	BI	CSFBI	SI
TMS	1.00											
UOCM	.831**	1.00										
TSC	.738**	.762**	1.00									
PP	.673**	.663**	.814**	1.00								
DRI	.593**	.595**	.686**	.732**	1.00							
BV	.528**	.557**	.622**	.664**	.744**	1.00						
SIF	.596**	.578**	.706**	.690**	.706**	.696**	1.00					
SIV	.585**	.544**	.649**	.596**	.520**	.478**	.624**	1.00				
SIM	.543**	.546**	.612**	.549**	.503**	.455**	.568**	.697**	1.00			
BI (M)	.523**	.541**	.591**	.576**	.548**	.486**	.637**	.633**	.813**	1.00		
CSFBI (IV)	.836**	.845**	.931**	.902**	.834**	.770**	.772**	.665**	.631**	.638**	1.00	
SI (DV)	.664**	.642**	.759**	.709**	.671**	.634**	.856**	.890**	.856**	.795**	.799**	1.00

** “Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed), N = 402”.

CSFBI = critical success factors for business intelligence; TMS = Top Management Support, UO = User-oriented change management, TSC = Team skills & composition, PP = Project planning, DRI = Data-related issues, BV = Business vision; BI = Business Intelligence; SI = Strategic Intelligence: F = Foresight, V = Visioning, M = Motivating.

Table 2. Tests of Reliability, Normality, Multicollinearity, and Descriptive statistics.

Variables	TMS	UOCM	TSC	PP	DRI	BV	SIF	SIV	SIM	BI	CSF	SI	Total
N. of item	2	2	4	3	2	2	5	5	5	5	15	15	35
Alpha (α)	.88	.89	.92	.81	.87	.80	.94	.89	.86	.86	.96	.94	.97
Skewness	-1.22-	-1.21-	-.98-	-.68-	-.95-	-.71-	-.87-	-.75-	-1.04-	-.98-	-.96-	-.94-	Er = .12
Kurtosis	1.83	1.70	.72	.30	.47	.53	.91	.92	2.07	2.34	1.16	1.91	Er = .25
VIF	2.87	3.65	2.54	2.74	3.14	2.73	2.76	1.21	2.45	4.60	3.64	3.43	VIF < 5
Tolerance	.37	.35	.29	.37	.32	.37	.37	.83	.41	.22	.28	.38	T < 1.00
Mean	5.35	5.33	4.97	4.76	5.03	4.46	3.63	3.60	3.95	3.90	4.97	3.73	HL
SD	1.22	1.22	1.31	1.24	1.42	1.04	.84	.78	.71	.68	1.09	.67	HL

Alpha (α) >= 70; Skewness & Kurtosis = ± 2.58 ; VIF = < 5; Mean & SD = High level (HL).

CSFBI = critical success factors for business intelligence; TMS = Top Management Support, UO = User-oriented change management, TSC = Team skills & composition, PP = Project planning, DRI = Data-related issues, BV = Business vision; BI = Business Intelligence; SI = Strategic Intelligence: F = Foresight, V = Visioning, M = Motivating.

3.5.3 Linear regression analysis

Based on the previous study's conclusions, which indicated the data's validity, reliability, and trustworthiness, as well as confirmed the data's normal distribution and arithmetic averages. These findings showed that multilinear regression could be utilized to validate and correct the study's assumptions and concerns.

Model¹ CSFBI's positive effect on business intelligence.

R square for "CSFBI" confirmed that the value is "0.41" from business intelligence. Also, the acceptable value for D.W should be $2.5 \leq D.W \leq 1.5$, consequently for this study, hence there isn't auto-correlation in the study items. F-test is "267.71" which guaranteed the overall variables in the model are positively effect significantly at $p\text{-value} < 0.01$. Whereas, the t-test is "16.36" shows the items in the study variables are positively effect at $p < 0.01$. Furthermore, CSFBI ($\beta = 0.64$) indicates that CSFBI is strictly correlated to business intelligence, when CSFBI grows by one mark business intelligence will grow accordingly to β (Kumawhichi & Yadav, 2018).

Model² Business intelligence positively affects strategic intelligence.

R square for "business intelligence" confirmed that the value is "0.63" from strategic intelligence. Also, the acceptable value for D.W should be $2.5 \leq D.W \leq 1.5$, consequently for this study, hence there isn't auto-correlation in the study items. F-test is "670.94" guaranteed the overall variables in the model are positively effect significantly at $p\text{-value} < 0.01$. Whereas, the t-test "25.90" shows the items in the study variables are positively effect at $p < 0.01$. Furthermore, Business intelligence ($\beta = 0.80$) indicates that Business intelligence is strictly correlated to strategic intelligence. When Business intelligence grows by one mark strategic intelligence will grow accordingly to β (Kumari & Yadav, 2018).

Model³ CSFBI positively affects strategic intelligence.

R square for CSFBI is "0.64" from strategic intelligence. Also, the acceptable value for D.W should be $2.5 \leq D.W \leq 1.5$, consequently for this study, hence there isn't auto-correlation in the study items. F-test is "688.36" guaranteed the overall variables in the model are positively effect significantly at $p\text{-value} < 0.01$. Whereas, the t-test value is "26.24" shows the items in the study variables are positively effect at $p < 0.01$. Furthermore, CSFBI ($\beta = 0.80$) indicates that CSFBI is strictly correlated to strategic intelligence. When CSFBI grows by one mark strategic intelligence will grow accordingly to β (Kumari & Yadav, 2018).

3.5.4 PROCESS Micro v3.5

This test was presented to estimate the time period between the variables of the study for the ability to identify the direct and indirect relationship, which contributes to the improvement and development of the research to reveal the defect in the previous literature and to develop a new contribution in the field of the studied research.

Model⁴ Business intelligence is a partial mediation (complementary) between CSFBI and strategic intelligence.

CSFBI has a positive effect on strategic intelligence ($b = 0.30$, $t = 15.77$, $p < 0.001$). Furthermore, LLCI is between 0.27 and 0.34 so it's significant due to the absence of zero numbers between them (Hayes, 2015). Similarly, Business intelligence has a positive effect on strategic intelligence ($b = 0.48$, $t = 15.44$, $p < 0.001$). As LLCI is between 0.42 and 0.54, it confirms the significance level due to the absence of zero numbers between them (Hayes, 2015). The values for the direct and indirect effect is as the equation: Indirect effect = $a (0.40) * b (0.48) = 0.19$; Direct effect = 0.30; Total effect = Indirect effect + Direct effect: $0.30 + 0.19 = 0.49$. Hence,

Table 3. Linear regression analysis.

Model	variables	R Square	D.W	β	F	t	Sig.	Decision
Model ¹	CSFBI → BI	0.41	2.12	0.64	267.71	16.36	0.00**	Accepted
Model ²	BI → SI	0.63	1.94	0.80	670.94	25.90	0.00**	Accepted
Model ³	CSFBI → SI	0.64	1.97	0.80	688.36	26.24	0.00**	Accepted

Regression is significant at $p \leq 0.01$; * Regression is significant at $p \leq 0.05$.

CSFBI = critical success factors for business intelligence; BI = Business Intelligence; SI = Strategic Intelligence.

the mediating variable positively affects IV and DV due to BootLLCI being between 0.14 and 0.24 as there are no zero numbers between them, therefore, it's significant at $p < 0.001$ (Hayes, 2015).

Is it a full or partial effect?

As for the partial mediation, the direct effect and indirect effect are significant at $p < 0.001$. Hence, $(a*b*c)$ have complementary effects (Hayes, 2015).

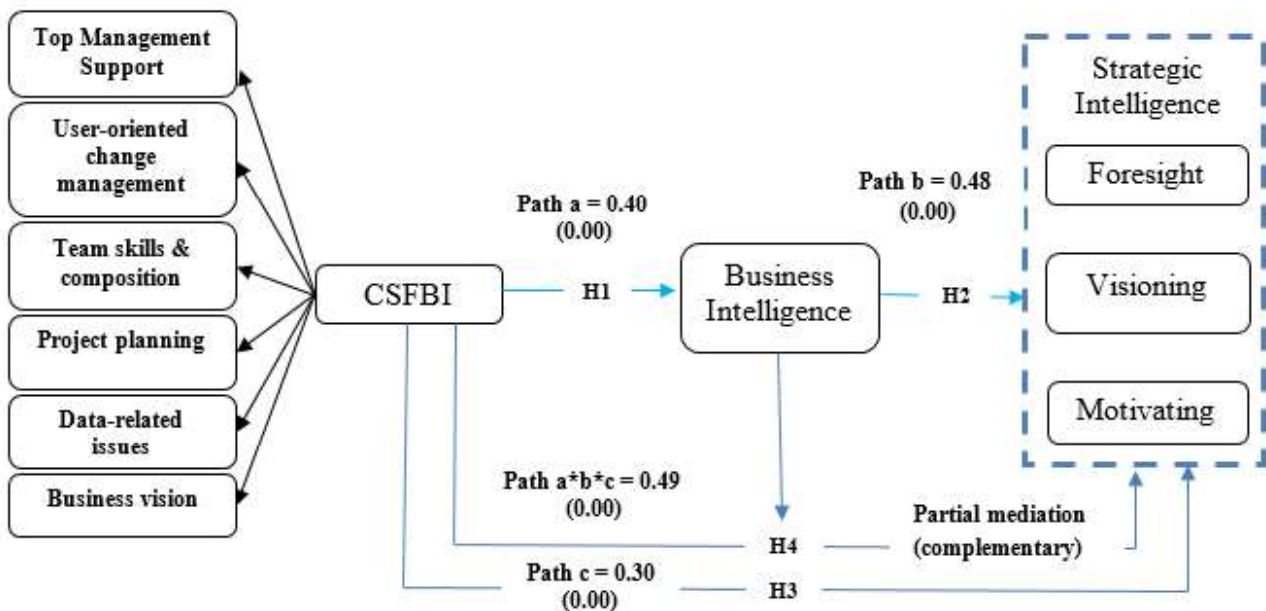
The results proved that CSFBI has a positive effect on strategic intelligence, where the degree of influence reached 30%, which indicates a good effect between IV and DV.

Moreover, business intelligence as a mediator intervenes between CSFBI and strategic intelligence, it increases the proportion of the relationship by 19% so that the total effect becomes 49% which strengthens the relationship to increase the influence, consequently playing a role in enhancing the indirect influence on a partial degree that called complementary competition and not less significance at the full effect because it is more common, indicating the discovery of additional mediators, which improves the quality of the relationship and shows new contributions that might enrich future studies with knowledge, reduce risks, and increase the odds of progress and success.

Table 4. Mediation analysis summary of BI between CSFBI & SI.

Relationship	Total Effect	Direct Effect	Indirect Effect	Confidence Interval		t-statistics	Conclusion
				Lower Bound	Upper Bound		
Model4							
CSF → BI → SI	0.49	0.30	0.19	0.14	0.24	26.24	Partial Mediation
Sig.	(0.00)	(0.01)	(0.00)				

** Level of confidence for all confidence intervals in output:95.0000.



The structure model illustrates the direct and indirect effects that “business intelligence is a partial (complementary) mediation between CSFBI and strategic intelligence”

NB.

Indicates direct effect (path c)

Indicates indirect effects (path a+b*c)

Figure 2. The illustration structural model of the direct and indirect effects between the study variables:

CSFBI = critical success factors for business intelligence; BI = Business Intelligence; SI = Strategic Intelligence.

4. DISCUSSION

Companies gain competitive advantages by incorporating intelligence technologies with IT capabilities (Awamleh & Bustami, 2022). Furthermore, technological advancement has made business life-cycle rather shorter than before. Hereafter, the organizations must have efficient and smart decision-making to gain a competitive advantage (Kalyani, 2019). Decision-making is not effective without real-time data for the right cause (Farjami & Molanapour, 2015). Previous research on the integration of CSF for BI, BI, and strategic intelligence is lacking. Specifically, the function of BI as a bridge builder between CSF for BI and Strategic Intelligence during the COVID-19 Pandemic. As a result, the current study offered a paradigm that shed light on the BI's mediating function in the interaction between CSF for BI and strategic intelligence in Jordan's financial industry.

The findings of this study demonstrated that CSF for BI is connected with strategic intelligence during the COVID-19 Pandemic. It also gave insight into the BI's mediating role in the link between CSFBI and strategic intelligence. On the one hand, as stated by (Yeoh & Popovi, 2016), CSF for BI leads to BI. The previous study has demonstrated that CSF for BI has been studied in a variety of contexts (Kfourri & Skyrius, 2016; Pellissier & Kruger, 2013; Pham et al., 2016). This research adds to the body of knowledge by giving empirical evidence of CSFBI, BI, and SI in Jordan. The mediating function of BI improves the association, which is consistent with the findings of another study done in Jordan (Awawdeh et al., 2022). Similar research (Esmaceli, 2014) that employed various variables but reached similar conclusions in different situations supports CSFBI and its favorable influence on strategic intelligence through the mediating function of business intelligence.

4.1 Academic and Practical Implications

Separate research on CSFBI, Business Intelligence, and strategic intelligence may be found in the literature. However, the integration of the three principles is lacking, particularly in emerging markets such as Jordan. The goal of this study is to present a paradigm for explaining the integration of intelligent systems and the impact these systems may have on each

other as well as on businesses, particularly during the COVID-19 Pandemic's economic collapse. This study's academic implication is that more studies and research similar to it should be conducted in various industries and markets, primarily in developed economies, to investigate intellectual and cultural perspectives as well as differences between businesses and other countries during the COVID-19 Pandemic. Second, this work provides a well-established and dependable model for explaining how the CSFBI influences strategic intelligence via BI mediation effects. Third, this study demonstrated that CSFBI improves strategic intelligence. Furthermore, corporate intelligence has a good mediation impact. Fourth, this research illuminated the integration of intelligent systems in businesses.

In terms of practical applications, this study discovered that CSFBI and BI assist firms in improving their strategic intelligence by increasing the integration of intelligent systems. As a result, businesses may make greater use of existing data to assist strategic intelligence and decision-making. On the other hand, ensuring that the significant investment in BI is used to benefit the businesses. The findings of this study motivate managers to integrate intelligent systems in order to leverage decision-making intelligence and inform strategic intelligence. Furthermore, managers may utilize BI to improve the usage of accessible data in businesses and integrate CSFBI with BI to achieve a beneficial outcome for the organization's intelligence system. Managers may employ integrated intelligence systems to better use data to adapt to external environment elements and strategic planning, especially during the COVID-19 pandemic, with the help of the study's findings.

4.2 Limitations

The applicability of this study to a certain sector, area, and city will have an impact on the findings' generalizability. Furthermore, this evidence was prevalent throughout the COVID-19 pandemic, limiting the generalizability of the study's findings. The findings, however, can still add to the body of knowledge by demonstrating how BI mediates the association between CSFBI and strategic intelligence. A solid model that quantifies the connections between CSFBI, business intelligence, and strategic intelligence should be provided as well.

4.3 Future Research

The outcomes of the study motivate academics to use the notion in a range of circumstances, such as new markets, industries, and cultural backgrounds. Because the literature on intelligent systems appears to be lacking in integration, there are possibilities to do research that can fill this void. In this case, the research model would be an assistant. The model would also be useful in cross-cultural or cross-sector inquiries.

5. CONCLUSION

This study investigated the association between CSFBI and strategic intelligence using BI as a bridge. The investigation was conducted on a sample of Jordanian banks during the COVID-19 pandemic. The collected data was examined and hypotheses were evaluated using SPSS's multi-regression analysis and descriptive statistics. The findings of the study indicated that the factors had a significant influence. BI has proved its ability to serve as a link between CSFBI and strategic intelligence. This study's model and findings add to the body of current literature and will guide future research by providing an integrated model that encompasses some of the intelligent systems in organizations. Companies must ensure that the significant investment in BI-related applications has borne fruit, and this study gives a means of doing so.

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