“Enhancing strategic decision-making: The role of business intelligence tools and organizational ambidexterity”

AUTHORS	Amineh Khaddam
ARTICLE INFO	Amineh Khaddam (2024). Enhancing strategic decision-making: The role of business intelligence tools and organizational ambidexterity. *Problems and Perspectives in Management*, *22*(1), 716-727. doi:10.21511/ppm.22(1).2024.56
DOI	http://dx.doi.org/10.21511/ppm.22(1).2024.56
RELEASED ON	Thursday, 28 March 2024
RECEIVED ON	Friday, 10 November 2023
ACCEPTED ON	Tuesday, 20 February 2024
LICENSE	This work is licensed under a Creative Commons Attribution 4.0 International License
JOURNAL	"Problems and Perspectives in Management"
ISSN PRINT	1727-7051
ISSN ONLINE	1810-5467
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
50	0	6

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

Amineh Khaddam (Jordan)

ENHANCING STRATEGIC DECISION-MAKING: THE ROLE OF BUSINESS INTELLIGENCE TOOLS AND ORGANIZATIONAL AMBIDEXTERITY

Abstract

The study aims to investigate the influence of business intelligence on decision-making quality, considering organizational ambidexterity as a moderating factor. The sample included a broad group of professionals from the high-technology segment, surveying 450 respondents; 254 valid responses were obtained from senior executives, supervisors, and analysts. These respondents were selected as they had a clear ability for a deeper dive into strategic goals and international expansion strategies, effectiveness in capacities, and daily financial management improvement. The results showed that with the use of business intelligence tools, organizations were in a better position to provide a higher quality of strategic decision-making ($p < 0.01$) as it helped in the functioning of new opportunities to identify and capitalize, while keeping an eye on the current capabilities. The study underscores that organizational ambidexterity is one of the most dominant causes ($p < 0.01$) for the effective realization of the benefits of business intelligence. Thus, for effective decision-making, it is crucial for organizations to synergize business intelligence tools with their ambidextrous capabilities. This underscores the significant role of organizational ambidexterity as a moderator and further demonstrates its importance in optimizing the use of business intelligence to improve strategic decision-making processes.

Keywords technological adoption, business analytics, data-driven decision-making, dynamic capabilities, Jordan

JEL Classification M10, M12, O32

Received on: 10th of November, 2023
Accepted on: 20th of February, 2024
Published on: 28th of March, 2024

Amineh Khaddam, Ph.D., Associate Professor, Management Information System Department, Faculty of Business, Amman Arab University, Jordan.

Conflict of interest statement:
Author(s) reported no conflict of interest

INTRODUCTION

In the past few years, witnessing both a large amount of data and its crucial impact on strategy decisions has boosted business intelligence tools to become front-stage centers. These crucial tools garner, out of all those information reservoirs, valuable patterns, trends, and insights. Whether strategic vision pushes people toward progress – or it was simply an error taking away some competitive ground and leading nowhere – depends entirely upon this issue. The rapid accumulation of large amounts of data and the deep structure that characterizes global markets make it more difficult than ever to choose a course and decide on action. Under these circumstances, business intelligence tools have been given high results for bringing decision-makers relevant, timely, and accurate information, assuming the quality of decisions improves organizational performance (Ploder et al., 2020; Tavera Romero et al., 2021).

The intricate relationship among business intelligence tools, critical processes of strategic decision-making, and complexities in organizational structures and culture are apparent. The ability to exploit existing resources and explore new opportunities represents the crux of

http://dx.doi.org/10.21511/ppm.22(1).2024.56

organizational ambidexterity, which is crucial in actualizing business intelligence systems (Kowalczyk & Buxmann, 2015; Shi et al., 2023). It is of great importance for this dual capacity, in particular, when encountering the highly fast-changing technology environment. This era provides people with rapidly emerging technological environments with constant rebalancing between implementation and optimization, innovation and perfection; the choices available are endless. It is widely believed that ambidexterity not only helps but also has a major impact on one of the critical ways business intelligence tools improve decision-making (Helbin & Van Looy, 2019). There is a void in current understanding of the effects of these various components when used together, and this study aims to fill this gap.

1. LITERATURE REVIEW AND HYPOTHESES

In modern business environments, taking advantage of business intelligence tools plays a critical role in raising the level of strategic decision-making. Business intelligence, as described by Chen et al. (2012), includes an array of technologies, systems, and practices specially designed to streamline complete collection, smooth integration, keen analysis, and compelling presentation requirements on relevant enterprise data in a timely manner. Proponents of business intelligence suggest that the tool provides a sophisticated and comprehensive viewpoint on an entity's data to permit more dynamic, adaptive (or even innovative) higher-level strategic determinations (Popovič et al., 2018). Making strategic decisions means assessing and determining the best way to achieve long-term organizational goals (Eisenhardt & Zbaracki, 1992; Glaveli et al., 2023). It is believed that business intelligence systems can provide useful insights, which would improve this process. By helping decision-makers understand their internal and external business environment, business intelligence tools are one way scholars consider positively affecting the quality of decisions (Saldana, 2021; Shollo & Kautz, 2010; Yerpude, 2023). By utilizing business intelligence tools, thorough insight is gained, thus improving understanding of the current economy in terms of industry trends and patterns pertaining to customer behavior and operational shortcomings (Ahmed et al., 2019; Alasiri & Salameh, 2020; Alami et al., 2022). Elbashir et al. (2008) have shown how business intelligence can improve performance through a greater ability to identify cost reduction opportunities and the growth of an organization.

In addition, the staggering and tight coupling characteristics of business intelligence make a strategic fit that is very flexible in response to the dynamically changing environment (Shi et al., 2023; Wixom & Watson, 2010). Strategic flexibility is imperative in today's dynamic and rapidly changing business environment, where delayed responses to market changes can easily result in serious setbacks (in terms of competitive positioning). Its ability to smoothly integrate and examine data from a variety of sources ensures that strategic decisions are made with an understanding of both market trends and the capabilities unique to each organization (Mahroof, 2019). However, the scholarly literature also shows potential limitations to relying on business intelligence for strategy work. In fact, Mithas et al. (2011) warn against overreliance on quantitative data, which in turn may drown out qualitative insights that are often a prerequisite for complex strategic decisions. However, if organizations use big data and business intelligence tools on a large scale as part of decision-making processes, the danger is that all those numbers will overwhelm people who have to make choices. They might end up too paralyzed by analysis to decide definitively (Marchand & Peppard, 2013). The scholarly looked at the key issue of human factors in using business intelligence tools. Business intelligence effectiveness is significantly dependent on the ability of users to interpret results and organizational culture related to decision-making processes (Parra et al., 2023; Yeoh & Koronios, 2010). However, the existence of resistance to change combined with ineffective data governance practices can create a considerable drag on business intelligence's positive impact on decision-making.

However, Maaitah (2023) argues that business intelligence tools in decision-making is critical to increasing the quality of strategic choices. It offers two crucial elements: precision and speed. Katebi et al. (2022) offer insight into a special type

of business intelligence – competitive intelligence. This appropriate balance links the effective use of business intelligence tools with the strategic integration between decision-making and competition in a market environment. They reveal how organizations can use what has been learned from business intelligence tools and how they can be used for thoughtful thinking within an industry-specific context so that quality is better or more accurately aligned with strategic objectives. Thus, considering the complex and diverse business environment, business intelligence tools are an essential aid to informed decision-making. In addition, Fitrianingrum et al. (2023) supplement the above-mentioned research by showing that business intelligence tools are not redundant just because of their size or scope. It stresses their universality and practical utility in helping to determine strategic decision-making.

Furthermore, Zamani et al. (2017) emphasize that business intelligence has the remarkable power to handle vast and complex data sets, enabling enterprises to make informed decisions in a strategic direction instead of being driven by operational conditions. This statement reinforces the idea that business intelligence tools are more than just time-saving devices but rather power agents for better decision-making. Its results support the proposed correlation as they are derived from an industry that lives and dies through data analysis. In addition, not just the results of business intelligence related decisions but also the process itself that leads to a decision is considered an advantage (Alzghoul et al., 2022). These tools increase the speed of decision-making and expand the range of factors considered, thereby raising overall organizational capability. With regard to this model, a certain resonance exists between present scholarly research and the past. By introducing the idea that business intelligence can not only improve the process by which strategic decisions are made but also the outcome itself, one adds one more piece to enrich this discussion. Similarly, Abu-AlSondos (2023) emphasizes this narrative by positing a notable increase in the caliber of decision-making when organizations adeptly utilize business intelligence systems. While Pérez-Campuzano et al. (2021) show that business intelligence tools can enhance strategic decision-making even in such periods (COVID-19) of uncertainty, they align with and extend the broader literature, illustrating the robustness and resilience of business intelligence tools. The given evidence fits in with the total findings gleaned from academic literature. In other words, a strong consensus has arisen among academics that business intelligence tools are helping to improve decision-making quality.

The concept of organizational ambidexterity refers to the ability of organizations to deal with both exploration, which is searching for new opportunities and creating something in a more active vein, as well as exploitation, which involves building on existing skills (Alshaar et al., 2023; Alzghoul et al., 2023). In business intelligence tools and the supply of strategic options, organizational ambidexterity takes on a vital role as moderator; it could either increase or attenuate the impact that business intelligence technologies can have on strategic decision-making. O'Reilly and Tushman (2013), who studied organizational ambidexterity, have attracted widespread attention from many researchers because being able to attain a competitive edge by combining both sides of the ledger demands a great deal in any rapidly changing context. Ambidextrous organizations are characterized by adaptable organizational structures, cultures that encourage both innovation and efficiency and leadership styles capable of combining strategic vision with operational caution (Kowalczyk & Buxmann, 2015). Entailing layers of complexity, the interface between business intelligence tools and organizational ambidexterity exists within strategic decision-making. Business intelligence tools generate a great deal of information that can be used to create strategies. Some are exploratory; some are exploitative (Liang et al., 2022). However, the quality of these instruments still depends on an organization's ability to balance between exploitation (using current tactics) and exploration (seeking new strategic directions), also known as ambidexterity.

According to Turner et al. (2013), an organization needs to achieve ambidexterity if it wants its employees to integrate the knowledge gleaned with business intelligence tools. The importance of absorption capacity rests in its influence on the efficiency and convenience that come from turning data analytics into strategic action. Those organizations that possess ambidexterity (the ability at

http://dx.doi.org/10.21511/ppm.22(1).2024.56

one time to pursue two different goals) are better equipped with business intelligence, applying it for both incremental improvements and breakthroughs (Zhang, 2022). This capability is in keeping with the "twin arrows" theory of exploitation (optimizing what is already on hand) and exploration (finding new opportunities). Furthermore, Lavie et al. (2010) state that organizational ambidexterity also has a moderating effect on the decision process itself. Ambidextrous organizations can achieve a comfortable balance between intuitive and analytical methods (García Joerger, 2022). Maintaining this equilibrium ensures that the data-driven understanding derived from business intelligence does not completely usurp and overshadow the important creative and experiential sides of strategic decision-making, which are necessary for creating innovation and adaptability.

Nevertheless, the research literature offers a different point of view. Gibson and Birkinshaw (2004) contend that the attempts to transform the organization into ambidextrous are defeated by internal squabbles, which may stunt the efficiency of information technology. They highlight a crucial challenge about how to meet the integration of the explorative and exploitative work that business intelligence needs to do in order to prevent various conflicts between factions in a company. Simsek et al. (2009), therefore, give prominence to the fact that contextual factors like dynamics of the industry, the size of the firm, and market positioning may affect the interference with organizational ambidexterity in the connection between the adoption of business intelligence tools and the quality of the outcome of the decision-making. Business intelligence presents this complicated relationship between the context and ambidexterity, opening or preventing the possibilities of strategic potential. In this way, although Al Eid and Yavuz (2022) did not concentrate on organizational ambidexterity, their study reveals how business intelligence systems can impression strategic decision-making. They presented a simple observation on the function place of DSS and business intelligence systems in strategic decision processes. These practices help organizations successfully balance the dual objectives of exploitation and exploration of the vital tenets underlying ambidexterity.

On the other hand, Husien et al. (2020) posit that ambidexterity could be considered a cross between business intelligence systems and organizations facilitated by learning relationships. This is because this study underscores the use of an ambidexterity strategy in the implementation of strategic initiatives, showcasing the mediating role played by ambidexterity implying that the tool has limited utility in the strategic decision-making process. Though business intelligence aspects for service innovations have previously been discussed in great detail by Maghrabi et al. (2011) with an ambidextrous perspective, no such discussion has been conducted up to the present day. Their findings show that the ambidextrous types of business organizations are better placed in the use of business intelligence for making strategic decisions because such organizations manage to strike a maximum balance between the improvement of services and the development of new ones (exploration and exploitation).

Kowalczyk and Buxmann (2015) introduce the relationship of ambidexterity on the level of support provided by decision-making processes through business intelligence and analytics. Thus, findings, relevant to factors affecting the dual focus on alignment and flexibility, or, as it comes to the literal ambidexterity, may have some implications for the ways or processes of using business intelligence and analytics in decision-making. This implies that the inclusion of ambidexterity could attenuate the relationship between business intelligence and the quality of given decisions.

Ahmad and Akbar (2021) focus on innovation ambidexterity as a mediator between information system strategies, business intelligence analytics, and firm performance. The study concentrates on the evaluation of company performance and the connection lingering between business intelligence analytics and innovation ambidexterity, which probably signifies a structure in the strategic decision-making realm. In addition, Al Ani et al. (2021) contribute to the emerging conversation concerning the effect of big data on strategic consideration on the subject of management ambidexterity. A formal business environment, which incorporates business intelligence with big data, is considered a catalyst for the process of upgrading the use of specific decisions. This aligns with

the notion that the efficacy of business intelligence tools in this field may be improved by implementing ambidexterity. Existing evidence indicates that organizational ambidexterity has a notable impact on moderating the association between the adoption of business intelligence tools and the quality of strategic decision-making. Organizations that possess ambidexterity are in a more advantageous position to effectively use business intelligence for both incremental and radical strategic initiatives. Nevertheless, attaining and sustaining ambidexterity is not devoid of obstacles, and the degree to which it may successfully regulate the use of business intelligence tools relies on many contextual elements.

Collectively, these works provide a theoretical assemblage that is in accordance with the suggested theory. The findings together suggest that the use of business intelligence tools, in conjunction with organizational ambidexterity (which involves both exploration and exploitation skills), may have a moderating effect on the relationship between business intelligence tools and the quality of strategic decision-making.

The objective of this study is to examine the impact of business intelligence tools on the quality of strategic decision-making while considering the potential influence of organizational ambidexterity as a moderating factor in this association. The study suggests the following hypotheses:

H1: Business intelligence tools will positively affect the quality of strategic decision-making.

H2: Organizational ambidexterity will moderate the relationship between business intelligence tools and the quality of strategic decision-making.

2. METHODS

The study used a quantitative research method to objectively measure and statistically analyze the data. Data were collected using a questionnaire. The questionnaire was developed carefully in iterations and is consistent with the design of this analysis. This tool was constructed following the literature review to measure the phenomena under investigation. In light of the multilingual nature of the target audiences, cultural and language appropriateness in conducting the survey is guaranteed. This required the rigorous procedure of back-translation recommended by Brislin (1970), where the questionnaire was first translated from English to Arabic and then checked word for word against its original. Only when there were no discrepancies between the two expertly written versions, the questionnaire was satisfactory enough in terms of semantic consistency before being released into the field testing. The objective of this approach was to accurately transmit these overtones and undercurrents. Before implementing the procedure on a large-scale basis, preliminary figures were produced by the directed analysis of 15 individuals. Additionally, the study revealed some observations concerning what participants thought about how important these variables were to them. This might indicate their degree of interest in participating in this survey. Many employees who participated in the pretest offered positive comments about their participation, and this will increase both the response rate and the quality of responses.

A stratified random sampling technique was used in the initial data-gathering phase. Fortunately, the study could systematically pick and divide companies in Jordan's high-technology sector into categories to ensure the sample was representative across company size, market impact, and technical advancement. Participants for the survey were chosen from various levels of the organization, including senior managers, supervisors, and analysts. These people were purposefully included in the study, as they understand their organizations' strategic objectives and initiatives to enter foreign markets, positioning attempts, and routine activities. In order to cast a wide net and gather opinions from many different types of people involved in the sector, 450 survey requests were sent out by various means (official organization emails and social media, including WhatsApp), with varying levels of success. The data collection took place from July to September 2023. To improve involvement, every survey was preceded by a cover letter, which extensively explained the study's aims and its significance. From the 450 surveys sent out, 258 complete replies were received. To avoid incomplete data and to ensure the surveys were reliable, the study weeded out four replies; 254 valid surveys remained. The re-

http://dx.doi.org/10.21511/ppm.22(1).2024.56

sponse rate achieved in this study is 56.4%, a respectable number for survey-based research work in the high technology industry.

In order to assess the quality of strategic decision-making, a scale consisting of 15 items was adopted from Al-Hashimi et al. (2022). The scale judged different aspects of strategic decision-making. For example, these include the quality of decision-making, timeliness in making decisions, and the extent to which decisions are evidence-based and consistent with corporate objectives. The measurement tool forces participants to evaluate the work done, how well it has been done, and what results have come out of all the strategic choices they have made for their businesses.

The use and impact of the business intelligence tools were measured by a seven-item assessment adopted from Abousweilem et al. (2023). Indeed, the choice of this scale was necessitated by its preference for maximizing usage value and performance from business intelligence tools in increasing information quality as well as improving speeds of information retrieval. These factors are important elements for making strategic decisions in a well-informed manner. Participants were asked about the incorporation, complexity, and degree of user satisfaction with these products in their organizational setting.

An 11-item scale for measuring organizational ambidexterity was adopted from Popadiuk (2012). The measurement focus here is the organization's capability to identify new possibilities and use existing knowledge, which is critical for long-term success and continuity. Ambidexterity includes all of its structural and contextual elements, such as flexibility, adaptability to the environment, and balancing between creativity and efficiency.

3. RESULTS

The study analyzed the participants' demographics, such as their education level, firm size, firm age, and job positions. The demographic results found that most hold a bachelor's degree (70.9%), but postgraduate degrees represent 18.9%. The firm age item showed that around 39.0% were between 6 and 10 years (99 responses), followed by those aged less than five years (84 responses, 33.1%). The results showed that the majority hold other positions (50%, 127 responses), followed by the supervisors (63 responses, 24.8%). On the other hand, the majority of firms had less than 250 employees (187 responses, 73.64%), and the yearly revenue for most firms was less than 10 million (107 responses, 42.1%), and only 25.2% – over 50 million.

Table 1. Sample demographics

Demographic	Frequency	Percentage
Educational level		
Associate degree	26	10.2
Bachelor degree	180	70.9
Postgraduate degree	48	18.9
Firm age		
Less than 5 years	84	33.1
6-10 years	99	39.0
Over 10 years	71	28.0
Position		
Manager	16	6.3
Supervisor	63	24.8
Analyst	48	18.9
Others	127	50.0
Firm size		
Less than 250 employees	187	73.6
Over 250 employees	67	26.4
Yearly revenue		
Less than 10 million	107	42.1
Between 10-50 million	83	32.7
Over 50 million	64	25.2

The study employed PLS-SEM to test the research hypotheses; therefore, it is important to check the descriptive statistics of the variables involved in this study. The analysis included the most common measures of mean, standard deviation, and normality measures of both skewness and kurtosis. The study evidenced the assumption that the normality measures of skewness and kurtosis should achieve values between –1 and +1 to examine the issue of normality (Baghban et al., 2013). The results confirmed that all study variables concluded with normal data (Table 2).

Table 2. Descriptive statistics

Construct	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic
BI	3.6997	0.72384	–0.811	0.455
OA	3.5333	0.75034	–0.433	0.305
SDM	3.3766	0.74532	–0.289	0.010

Note: BI, business intelligence tools; SDM, strategic decision making; OA, organizational ambidexterity.

The study has examined two types of models, with specific procedures for each type of model. The first one is called the measurement model, which is assessed by validity and reliability. In general, the study concerns different types of validity, such as convergent validity, which is evaluated by average variance extracted (AVE) and composite reliability (CR), and the good results of this analysis require values greater than the lower limits of 0.50 and 0.60, respectively. Other significant results related to the item loadings should be greater than 0.70. Discriminant validity was assessed through the AVE's square root. The reliability of the measuring items in this study was examined by the internal consistency measure of Cronbach's alpha (Table 3).

Table 3. Measurement model

Item	Factor loadings	AVE	CR	Alpha
BI1	0.82			
BI2	0.78			
BI3	0.80			
BI4	0.79	0.64	0.92	0.90
BI5	0.80			
BI6	0.79			
BI7	0.79			
SDM1	0.75			
SDM2	0.74			
SDM3	0.85			
SDM4	0.79			
SDM5	0.81			
SDM6	0.80			
SDM7	0.81			
SDM8	0.78	0.63	0.96	0.95
SDM9	0.75			
SDM10	0.81			
SDM11	0.80			
SDM12	0.79			
SDM13	0.83			
SDM14	0.76			
SDM15	0.79			
OA1	0.80			
OA2	0.81			
OA3	0.80			
OA4	0.79			
OA5	0.83			
OA6	0.79	0.63	0.95	0.94
OA7	0.81			
OA8	0.77			
OA9	0.83			
OA10	0.72			
OA11	0.77			

Note: BI, business intelligence tools; SDM, strategic decision making; OA, organizational ambidexterity.

The measurement model has also been checked for both convergent and discriminant validity. The variables' reliability achieved more than 0.7 with great values of AVE above 0.5, which means that the data achieved this validity validation. The results also showed that the data had discriminant validity by checking the square root of AVE (Table 4). Therefore, the results proved that the study model fits different fitness indices.

Table 4. Discriminant validity

	BI	OA	SDM
BI	0.800		
OA	0.762	0.768	
SDM	0.655	0.611	0.796

Note: BI, business intelligence tools; SDM, strategic decision making; OA, organizational ambidexterity.

The study also examined the structural model using the PLS-SEM approach, commonly used to test research hypotheses. Table 5 illustrates the path analysis findings that included the positive effect of the business intelligence tools on strategic decision-making. The findings confirmed that business intelligence tools significantly affected strategic decision-making, with a variation of 70%. Thus, business intelligence tools increase strategic decision-making. It is noted that the business intelligence tools had a significant positive effect on strategic decision-making (H1: $\beta = 0.841$, $t = 32.554$, $p = 0.000$). Thus, H1 is accepted.

Table 5. Hypothesis testing

Direct effects		β	SD	T	P	Decision
H1	BI → SDM	0.841	0.026	32.554	0.000	Supported

Note: BI, business intelligence tools; SDM, strategic decision making. * $P < 0.01$.

Furthermore, path analysis was conducted through the SmartPLS3 program to test the moderating effect of organizational ambidexterity under the effect of business intelligence tools on strategic decision-making. To assess the moderating effect of organizational ambidexterity among the relationships between business intelligence tools and strategic decision-making, the results revealed (Table 6) that the moderating effect (interaction) of the organizational ambidexterity construct was significant and positive ($\beta = 11.30$, $p < 0.01$). In cases where the business intelligence tools are low and high, it is vital to determine the direc-

http://dx.doi.org/10.21511/ppm.22(1).2024.56

Table 6. Moderating effect

	Indirect effects	β	SD	T	P	Decision
H2	Business intelligence tools*Organizational ambidexterity → Strategic decision making	0.036	0.024	2.50	0.000	Supported

tion of the effect of the business intelligence tools in the high-tech sector and the interaction of organizational ambidexterity. The results observed that employees who perceive that the company has a high level of organizational ambidexterity improve more with the business intelligence tools than those with a low perception when there are high business intelligence tools, and in this case, H2 is also accepted. Accordingly, when high-tech organizations adopt organizational ambidexterity by considering business intelligence tools, they may increase their strategic decision-making.

4. DISCUSSION

The aim of this study was to unravel the mechanisms and behavioral reactions to business intelligence tools in strategic decision-making processes and to study the role of organizational ambidexterity as a moderator to enforce high-tech industry venues. In recent years, the use of this technology has increased, and most organizations rely on business intelligence tools in their decision-making process, driven extensively by data-driven recommendations. This is due to the simple fact that if an organization recognizes that business intelligence tools were previously, rather than are being, implemented into a business, then it is likely to treat such tools as a legacy rather than a valuable asset. Having a profound knowledge of business intelligence tools, organizations are in a position to make informed decisions, are highly agile, and even achieve optimal success. The initial hypothesis suggested the positive impact of business intelligence tools on strategic decision-making accuracy, which is evidenced by different research publications. For example, Maaitah (2023) showed how business intelligence application tools not only improve the quality of decisions but also increase organizational performance. Similarly, Katebi et al. (2022) focused on business intelligence as a defining factor in fulfilling strategic decisions, which has illustrated its ability to provide businesses with commercial advantage. Fitrianingrum et al. (2023) reported that business intelligence tools help free some business resources and allow better decision-making processes. In addition, Abu-AlSondos (2023) provided the details showing that business intelligence systems positively influence decision-making practices. These results reveal the crucial impact that the business intelligence tools make in different business environments.

The second hypothesis suggested that organizational ambidexterity would play the role of a critical mediator in the force accompanying the use of business intelligence tools and the high quality of strategic decisions made by companies. This assumption received solid support, supporting the results of Al Eid and Yavuz (2022), who stated that business intelligence systems and decision-support applications obviously increase strategic decision-making within the firm. The study highlighted that ambidextrous organizations, when they can leverage capabilities that reside in the organization and search for new opportunities, tend to improve their business intelligence systems. In addition, Husien et al. (2020) discovered that ambidexterity enhances the desirable effect of business intelligence increasing an organization's ability to gather information and adapt in a timely manner. Moreover, ambidexterity not only increases the value of business intelligence tools but also allows a more accurate perception of the decisions. These insights support the criticality of organizational ambidexterity as organizations combine business intelligence tools with strategic decision-making, providing a guide on the actions for companies seeking to use business intelligence tools to the fullest. More specifically, the proposed recommendations suggest organizations modify their structures to embrace ambidexterity, effectively breaking the inertia of business intelligence tools and moving toward more dexterous tactical acts to advantage the markets. This paper, on a theoretical level, contributes to the broader discussion on the role of business intelligence and its effects on organizational performance. The study closes the gap between theo-

retical constructs and operational application by incorporating different perspectives, opening an immediate vision into the decision-making strategies that are most potent in the world of business in the modern environment.

This work also has its limitations. The self-reported data used by participants could be biased, especially concerning the use of business intelligence tools and assessing organization ambidexterity. Moreover, the cross-sectional design of the study prevents establishing causality between the variables. There is a need for further studies to offer better knowledge related to the role that business intelligence tools have in the decision-making process. Furthermore, the wider use of groups and settings can make more findings generalizable and more applicable to different users. Considering the above discussion, notable elements include an understanding of how organizational ambidexterity affects the deployment of business intelligence tools and the efficiency of strategic decision-making. In addition, business intelligence can be measured with the help of performance data; quantitative evaluation of organizational results is possible via the use of this particular methodology. To mitigate this drawback, there is room for qualitative research techniques to improve the context around data collected through studies on the effects of using business intelligence tools. This allows one to obtain more information regarding the elements that influence the adaptation and application of these tools in various organizations. This is vital in understanding the implementation of information technology in business to get a competitive edge, emphasizing the need to develop a deeper knowledge of how technology affects organizational practices.

CONCLUSION

This study provides a broad perspective on the deep impact of organizational decision-making on business intelligence tools. It points out the innovative significance of organizational ambidexterity, understood as organizational capacity to reconcile current competence and future opportunities delimited to advanced performance. At the core of the conversation lies that the success of the organizational ambidexterity relies on the harmonization of job roles and assessment metrics with the overall objectives of the organization. The study reveals that organizations that adopt agility to new challenges and discernment to use their existing fortress of strength through business intelligence tools are in a commanding competitive position. Combining the virtue of business intelligence tools and organizational ambidexterity offers businesses the benefit of efficiency in the decision- and opportunity-making processes, as well as creates unique positions on the constantly changing market. Integrating such tools helps organizations shave the decision-making process into one that saves time, money, and resources to breed a culture of organizational performance and strategic readiness.

Additionally, the study conducts an in-depth assessment of the relationship between technology and organizational structures, presenting the use of business intelligence tools in enhancing workflow and operational effectiveness. It shows that implementing a strategic model for analyzing resource distribution and business intelligence tools can bring significant profit to companies. Such a framework needs to take into consideration that the organization has an end goal of its strategic objectives and capacity to meet the needs, which will be required in the changing nature of a dynamic market environment. Taking a careful look from both academic and industry perspectives, this case study recommends a more subtle and tactful approach to use business intelligence tools in organizations. This approach infers that businesses can change their decision-making process to make them more accurate and become competitive in the market in a sustainable manner by responding to demand and opportunities. This study, therefore, acts as a useful guide for businesses with the aim of using business intelligence tools with strategic purposes so that it can be the source of their growth and competitive success.

http://dx.doi.org/10.21511/ppm.22(1).2024.56

AUTHOR CONTRIBUTIONS

Conceptualization: Amineh Khaddam.
Data curation: Amineh Khaddam.
Formal analysis: Amineh Khaddam.
Funding acquisition: Amineh Khaddam.
Investigation: Amineh Khaddam.
Methodology: Amineh Khaddam.
Project administration: Amineh Khaddam.
Resources: Amineh Khaddam.
Software: Amineh Khaddam.
Supervision: Amineh Khaddam.
Validation: Amineh Khaddam.
Visualization: Amineh Khaddam.
Writing – original draft: Amineh Khaddam.
Writing – review & editing: Amineh Khaddam.

REFERENCES

1. Abousweilem, F., Alzghoul, A., Khaddam, A. A., & Khaddam, L. A. (2023). Revealing the effects of business intelligence tools on technostress and withdrawal behavior: The context of a developing country. *Information Development.* https://doi.org/10.1177/02666669231207592
2. Abu-AlSondos, I. (2023). The impact of business intelligence system (BIS) on quality of strategic decision-making. *International Journal of Data and Network Science, 7*(4), 1901-1912. http://dx.doi.org/10.5267/j.ijdns.2023.7.003
3. Ahmad, T., & Akbar, A. (2021). Role of information system strategies, business intelligence and analytics used to enhance firm performance: Mediating role of innovation ambidexterity. *Journal of Digitovation and Information System, 1*(2), 69-80. https://doi.org/10.54433/JDIIS.2021100006
4. Ahmed, A., Yusof, S. A. M., & Oroumchian, F. (2019). Understanding the business value creation process for business intelligence tools in the UAE. *Pacific Asia Journal of the Association for Information Systems, 11*(3), 4. Retrieved from https://aisel.aisnet.org/pajais/vol11/iss3/4/
5. Al Ani, M. K., Imran, R., & Al Awaeed, Z. S. (2021). Big data and organizational ambidexterity: A strategic perspective. In N. R. Al Mawali & A. M. Al Lawati (Eds.), *Fourth Industrial Revolution and Business Dynamics: Issues and Implications* (pp. 3-20). Singapore: Palgrave Macmillan. http://dx.doi.org/10.1007/978-981-16-3250-1_1
6. Al Eid, A. A., & Yavuz, U. (2022). The effect of using decision support systems applications and business intelligence systems in making strategic decisions: A field study in the city of Gaziantep. *Global Journal of Economics & Business, 12*(2), 256-273. https://doi.org/10.31559/GJEB2022.12.2.8
7. Alami, R., Elrehail, H., & Alzghoul, A. (2022). Reducing cognitive dissonance in health care: Design of a new Positive psychology intervention tool to regulate professional stress among nurses. *2022 International Conference on Cyber Resilience (ICCR)* (pp. 1-8). Dubai, United Arab Emirates. Retrieved from https://ieeexplore.ieee.org/document/9995740
8. Alasiri, M., & Salameh, A. A. (2020). The impact of business intelligence (BI) and decision support systems (DSS): Exploratory study. *International Journal of Management, 11*(5), 1001-1016. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3631747
9. Al-Hashimi, K., Weerakkody, V., Elbanna, S., & Schwarz, G. (2022). Strategic decision making and implementation in public organizations in the gulf cooperation council: The role of procedural rationality. *Public Administration Review, 82*(5), 905-919. https://bradscholars.brad.ac.uk/handle/10454/18696
10. Alshaar, Q., Khaddam, A. A., Irtaimeh, H. J., & Alzghoul, A. (2023). High-performance work systems and intrapreneurial behavior: The mediating role of knowledge centered culture. *Organizacija, 56*(3), 206-220. Retrieved from https://sciendo.com/article/10.2478/orga-2023-0014
11. Alzghoul, A., Algraibeh, K. M., Khawaldeh, K., Khaddam, A. A., & Al-Kasasbeh, O. (2023). Nexus of strategic thinking, knowledge-oriented leadership, and employee creativity in higher education institutes. *International Journal of Professional Business Review, 8*(4), e01107-e01107. https://doi.org/10.26668/businessreview/2023.v8i4.1107
12. Alzghoul, A., Khaddam, A. A., Abousweilem, F., Irtaimeh, H. J., & Alshaar, Q. (2022). How business intelligence capability impacts decision-making speed, comprehensiveness, and firm performance. *Informa-*

tion Development. http://dx.doi.org/10.1177/02666669221108438

13. Baghban, A. A., Younespour, S., Jambarsang, S., Yousefi, M., Zayeri, F., & Jalilian, F. A. (2013). How to test normality distribution for a variable: A real example and a simulation study. *Archives of Advances in Biosciences, 4*(1). https://doi.org/10.22037/jps.v4i1.3974
14. Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1*(3), 185-216. https://doi.org/10.1177/135910457000100301
15. Chen, H., Chiang, R. H., & Storey, V. C. (2012). Business intelligence and analytics: From big data to big impact. *MIS Quarterly, 36*(4), 1165-1188. https://doi.org/10.2307/41703503
16. Eisenhardt, K. M., & Zbaracki, M. J. (1992). Strategic decision making. *Strategic Management Journal, 13*(S2), 17-37. https://doi.org/10.1002/smj.4250130904
17. Elbashir, M. Z., Collier, P. A., & Davern, M. J. (2008). Measuring the effects of business intelligence systems: The relationship between business process and organizational performance. *International Journal of Accounting Information Systems, 9*(3), 135-153. https://doi.org/10.1016/j.accinf.2008.03.001
18. Fitrianingrum, A., Indriastuti, M., Riansyah, A., Basir, A., & Rusdi, D. (2023). Business intelligence: Alternative decision-making solutions on SMEs in Indonesia. In *International Conference on Emerging Internetworking, Data & Web Technologies* (pp. 500-507). Cham: Springer International Publishing.
19. García Joerger, A. (2022). *Organizational ambidexterity: Antecedents and consequences.* Universitat Jaume I.
20. Gibson, C. B., & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of Management Journal, 47*(2), 209-226. https://doi.org/10.2307/20159573
21. Glaveli, N., Manolitzas, P., Palamas, S., Grigoroudis, E., & Zopounidis, C. (2023). Developing effective strategic decision-making in the areas of hotel quality management and customer satisfaction from online ratings. *Current Issues in Tourism, 26*(6), 1003-1021. https://doi.org/10.1080/13683500.2022.2048805
22. Helbin, T., & Van Looy, A. (2019). Business process ambidexterity and its impact on business-it alignment. A systematic literature review. *2019 13th International Conference on Research Challenges in Information Science (RCIS)* (pp. 1-12). Brussels, Belgium. http://dx.doi.org/10.1109/RCIS.2019.8877073
23. Husien, W. A., Alhamdany, S. N., & Kataa, I. A. (2020). The mediating role of organizational ambidexterity in the relationship between business intelligence systems and the learning organization exploratory study at the Ramadi's hospitals. *2020 2nd Annual International Conference on Information and Sciences (AiCIS)* (pp. 213-221). Fallujah, Iraq. https://doi.org/10.1109/AiCIS51645.2020.00041
24. Katebi, P., Ehdaie, S., & Jalilian, H. (2022). Analysis of the effect of competitive intelligence on strategic decision making in small and medium-sized food enterprises. *International Journal of Management, Accounting & Economics, 9*(6). Retrieved from https://openurl.ebsco.com/EPDB%3Agcd%3A14%3A6102206/detailv2?sid=ebsco%3Aplink%3Ascholar&id=ebsco%3Agcd%3A159946732&crl=c
25. Kowalczyk, M., & Buxmann, P. (2015). An ambidextrous perspective on business intelligence and analytics support in decision processes: Insights from a multiple case study. *Decision Support Systems, 80,* 1-13. https://doi.org/10.1016/j.dss.2015.08.010
26. Lavie, D., Stettner, U., & Tushman, M. L. (2010). Exploration and exploitation within and across organizations. *Academy of Management Annals, 4*(1), 109-155. https://doi.org/10.5465/19416521003691287
27. Liang, H., Wang, N., & Xue, Y. (2022). Juggling information technology (IT) exploration and exploitation: A proportional balance view of IT ambidexterity. *Information Systems Research, 33*(4), 1386-1402. https://doi.org/10.1287/isre.2022.1105
28. Maaitah, T. (2023). The role of business intelligence tools in the decision making process and performance. *Journal of Intelligence Studies in Business, 13*(1), 43-52. http://dx.doi.org/10.37380/jisib.v13i1.990
29. Maghrabi, R. O., Oakley, R. L., Thambusamy, R., & Iyer, L. (2011). The role of business intelligence (BI) in service innovation: An ambidexterity perspective. *AMCIS 2011 Proceedings – All Submissions.* Retrieved from https://aisel.aisnet.org/amcis2011_submissions/319/
30. Mahroof, K. (2019). *Exploring the impact of business intelligence (BI) use on organisational power dynamics: A National Health Service (NHS) case study.* University of Bradford. Retrieved from https://bradscholars.brad.ac.uk/handle/10454/17460
31. Marchand, D. A., & Peppard, J. (2013). Why IT fumbles analytics. *Harvard Business Review, 91*(1), 104-112. Retrieved from https://hbr.org/2013/01/why-it-fumbles-analytics
32. Mithas, S., Ramasubbu, N., & Sambamurthy, V. (2011). How information management capability influences firm performance. *MIS Quarterly, 35*(1), 237-256. https://doi.org/10.2307/23043496
33. Niu, Y., Ying, L., Yang, J., Bao, M., & Sivaparthipan, C. B. (2021). Organizational business intelligence and decision making using big data analytics. *Information Processing & Management, 58*(6), 102725. https://doi.org/10.1016/j.ipm.2021.102725
34. O'Reilly III, C. A., & Tushman, M. L. (2013). Organizational ambidexterity: Past, present, and future. *Academy of Management Perspectives, 27*(4), 324-338. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2285704

http://dx.doi.org/10.21511/ppm.22(1).2024.56

35. Parra, X., Tort-Martorell, X., Alvarez-Gomez, F., & Ruiz-Viñals, C. (2023). Chronological evolution of the information-driven decision-making process (1950–2020). *Journal of the Knowledge Economy, 14*(3), 2363-2394. https://doi.org/10.1007/s13132-022-00917-y

36. Pérez-Campuzano, D., Ortega, P. M., Andrada, L. R., & López-Lázaro, A. (2021). Artificial intelligence potential within airlines: A review on how AI can enhance strategic decision-making in times of COVID-19. *Journal of Airline and Airport Management, 11*(2), 53-72. Retrieved from https://upcommons.upc.edu/bitstream/handle/2117/366133/189-851-1-PB.pdf?sequence=1&isAllowed=y

37. Ploder, C., Bernsteiner, R., & Dilger, T. (2020). Improving decision quality for business users based on cloud-based self-service business intelligence tools. *Cloud Computing and Data Science, 1*(1), 1-11. http://dx.doi.org/10.37256/ccds.112020162

38. Popadiuk, S. (2012). Scale for classifying organizations as explorers, exploiters or ambidextrous. *International Journal of Information Management, 32*(1), 75-87. https://doi.org/10.1016/j.ijinfomgt.2011.07.001

39. Popovič, A., Hackney, R., Tassabehji, R., & Castelli, M. (2018). The impact of big data analytics on firms' high value business performance. *Information Systems Frontiers, 20,* 209-222. https://doi.org/10.1007/s10796-016-9720-4

40. Saldana, M. A. R. (2021). *Exploring the strategies of decision-makers to improve business decisions using business intelligence and analytics tools.* Colorado Technical University.

41. Shi, Y., Van Toorn, C., & McEwan, M. (2023). Exploration-exploitation: How business analytics powers organisational ambidexterity for environmental sustainability. *Information Systems Journal.* http://dx.doi.org/10.1111/isj.12456

42. Shollo, A., & Kautz, K. (2010). Towards an understanding of business intelligence. *ACIS 2010 Proceedings.* Retrieved from https://aisel.aisnet.org/acis2010/86/

43. Simsek, Z., Heavey, C., Veiga, J. F., & Souder, D. (2009). A typology for aligning organizational ambidexterity's conceptualizations, antecedents, and outcomes. *Journal of Management Studies, 46*(5), 864-894. https://doi.org/10.1111/j.1467-6486.2009.00841.x

44. Tavera Romero, C. A., Ortiz, J. H., Khalaf, O. I., & Ríos Prado, A. (2021). Business intelligence: Business evolution after industry 4.0. *Sustainability, 13*(18), 10026. https://doi.org/10.3390/su131810026

45. Turner, N., Swart, J., & Maylor, H. (2013). Mechanisms for managing ambidexterity: A review and research agenda. *International Journal of Management Reviews, 15*(3), 317-332. http://dx.doi.org/10.1111/j.1468-2370.2012.00343.x

46. Wixom, B., & Watson, H. (2010). The BI-based organization. *International Journal of Business Intelligence Research (IJBIR), 1*(1), 13-28. http://dx.doi.org/10.4018/jbir.2010071702

47. Yeoh, W., & Koronios, A. (2010). Critical success factors for business intelligence systems. *Journal of Computer Information Systems, 50*(3), 23-32. https://doi.org/10.1080/08874417.2010.11645404

48. Yerpude, S. (2023). Business intelligence and its impact on decision making. In K. Sood, B. Balusamy, & S. Grima (Eds.), *Digital Transformation, Strategic Resilience, Cyber Security and Risk Management* (Vol. 111, pp. 209-223). Leeds: Emerald Publishing Limited. https://doi.org/10.1108/S1569-37592023000111C014

49. Zamani, M., Maeen, M., & Haghparast, M. (2017). Implementation of business intelligence to increase the effectiveness of decision making process of managers in companies providing payment services. *Journal of Internet Banking and Commerce, 22*(S8). Retrieved from https://www.icommercecentral.com/peer-reviewed/implementation-of-business-intelligence-to-increase-the-effectiveness-of-decision-making-process-of-managers-in-companies-providin-85788.html

50. Zhang, D. (2022). *CIO's roles in building IT-enabled organizational ambidexterity.* University of Maryland. Retrieved from https://www.proquest.com/openview/111c0ea7acb80a6b9bc7ff9a74208bc4/1?pq-origsite=gscholar&cbl=18750&diss=y