The Relationship Between Business Intelligence Capabilities and Business Outcomes of Small and Medium Sized Enterprises: The Moderating Role of Competitive Intelligence

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Abstract. Business intelligence has emerged as a crucial topic in contemporary business research, with various factors being addressed across multiple domains. This study aims to investigate the relationship between business intelligence capabilities and business outcomes, as well as the moderating role of competitive intelligence in this association. Employing a quantitative research approach, data was gathered from small and medium-sized enterprises (SMEs) in Jordan, with 319 participants, comprising owners and managers, contributing to the sample. The partial least squares structural equation modeling (PLS-SEM) method was utilized for key analytical procedures. The findings revealed significant effects of all hypothesized relationships, demonstrating a substantial moderating influence of competitive intelligence on the association between business intelligence capabilities and business outcomes. Additionally, the results highlighted the significant moderation of competitive intelligence within this relationship. This research not only corroborates existing evidence in the literature but also addresses knowledge gaps in the field by proposing a novel conceptual framework that incorporates new factors for a more comprehensive understanding of the subject matter.

Keywords: Business Intelligence, Small and Medium-Sized Enterprises (SME), Competitive Intelligence, Moderation, SEM-PLS.

1. Introduction

Understanding the organizational generated data is one of the critical business strategies to gain competitive advantage through the business contexts. The business competitiveness can be generated also by integrating information processing which has become the base for this goal (Chen & Lin, 2021). However, today's organizations have to believe that get the right and adequate among of key information at the right time as well give to the right individuals. The Business Intelligence capabilities of the Small and Medium Enterprises SMEs have provided some alternatives, since the target stakeholder like suppliers of the intelligence solutions for the business still require greater capabilities in the large companies (Ranjan, 2008). Resulting of the companies' greater receptiveness to the projects and also their financial ability, this lead to give more focus on the important effect of business intelligence capabilities over the business outcomes e.g competitive advantage (Ramakrishnan et al., 2020). For a better grasp, the current large companies have started to realize the importance of analyzing and processing the available data during their own information systems, and they start further investments in these systems with building analytical skills generally in business intelligence (McLeana & Woodsb, 2019). The recent SMEs furthermore began gather some key requirements to receive considerable business intelligence solutions.

The dynamic capabilities paradigm has proposed some common attributes of the intelligence business which have been examined in the literature and developed a conceptual framework to interprets the crucial mechanisms of the business intelligence as a system for environmental transformation and changes (Olszak, 2014). However, in accordance with the theory of dynamic capabilities, the relevant literature expanded the assumptions of this theory and encourage the empirical works to expand the effect of this capabilities to achieve business goals e.g. competitive advantage (Tarek & Adel, 2016). The business intelligence capabilities through the systematic process discern the business changes and transform into a new cognitive knowledge with appropriate actions to generate business capacity and improve operation efficiency and effectiveness (Negash & Gray, 2008). The concept of the competitive intelligence indicates to a systematic and ethical processes to collect, analyze and manage the external information that influence the organization's key decisions, and operations (Zheng et al., 2012).

The literature of business intelligence didn't explore the effect of this new business aspect associated with the business environments particularly in the developing contextual settings like Jordan. They mostly focus on the business intelligence with a relationship of competitiveness (e.g Guarda et al., 2013) or performance (e.g AL-Shubiri, 2012). But lack of further investigations on the field of SMEs environments with intervening critical factors among this relationship. Thus, this motivates the current study to cover this gap. Examining the association between business intelligence capabilities and business outcomes or performance within SMEs context of Jordan business practices empirically enable the research to validate the latent constructs of the conceptual model and how can the business intelligence gain a competitive edge. Thus, the current research paper intends to examine the relationship between business intelligence capabilities and business outcomes which may impede the SMEs from realizing this relation as well analyse the moderating role of competitive intelligence among this relation. So that, the research question interested to be addressed in this research work is formulated as following: what is the relationship between business intelligence capabilities and business outcomes in the SMEs? And to which extent the competitive intelligence can moderate this relationship?

2. Literature Review & Hypotheses Development

In addressing the important of the intellectual capital assets of the organization and how they can influence firms' outcomes under different factors role of showed that the components of intellectual capabilities have a positive relation with many significant business aspects like innovation and quality, and this contribute both of financial and operational performance of the business (Niwash et al., 2022). Further, the literature in this setting focused in general to determine the relations between intellectual capacity of the business and the competitive advantage over many essential business sectors e.g.

commercial banks (Kim, 2019). The results of the studies found a positive relationship which trigger the research works to explore the impact of the business capacity. During the changes of businesses and the increasing attention of the dynamic capabilities of the business for competitive advantage generation, the dimensions of these capabilities are significantly associated with the competitive advantage of the companies (Srinivasan et al., 2021).

In the same vein, the discussion of the relevant literature argued that the value of the intelligence mainly is based on some attributes including the analysis results and contents of the reports which should be easy to understand for the users (McGonagle, 2016). In addition, an important phase includes using the competitive intelligence for decision making process. Some studies recommend that the departments carry out the competitive intelligence that has been placed with high possible among the business operations and structure (Stefanikova et al., 2015). The departments that interested with competitive intelligence are usually directly under the top management e.g. CEO. The managers in the large sized companies are directly informs the departments with information processing to integrate within the key organizational units that are responsible for business development and growth in light of the strategic planning practices (Ali & Anwar, 2021). Although there are different results that have been conducted in different context to understand the most external and internal challenges that shape the business and market research and competitive intelligence, still few conducts in the developing contexts with significant factors (Ahmad & Mustafa, 2022). Business intelligence capabilities can be defined as the ability to manage and deploy the key functionalities of the business in accordance with other resources. Business intelligence capabilities in this study include different dimensions as stated in (Ramakrishnan et al., 2016) namely innovation infrastructure capability, process capability, and integration capability.

2.1. Innovation Infrastructure Capability

This factor indicates to the foundational ability of the business to mobilize the different functionalities of the business intelligence to support the aspects of business innovation by developing the technical, infrastructure and culture capabilities (Xu et al., 2022). This dimension also includes several constitutes like structural issues. The business intelligence technology refers the degree and the extent of the technical readiness for the organizations to adopt business intelligence in their key activities like data processing system and communication which represent a module of the business intelligence systems (Jiwani & Gupta, 2018). Moreover, the connection of the information systems can help the organization to bring up together as well integrate the fragmented data flow of the intelligence over different parts of the organization (Wang et al., 2022). The innovation capability dimension also includes the degree of collaboration, distribution, learning, opportunity discovery, and business intelligence mapping. And these aspects related to the data security and privacy and analysis. For example, the structural element of innovation infrastructure of the business intelligence means module of the business design that generally can help in facilitating the technological architecture and relevant functions and consequent innovations to the business intelligence (Knabke & Olbrich, 2018). The organizational structures often are logical structure of the functions and units within the organizations; thereby they can lead to optimal functions of the organizations' structure for effective business intelligence implementation. Therefore, the study formulates the following research hypothesis.

H1: innovation infrastructure capability positively influences business outcomes of SMEs.

2.2. Process Capability

The business intelligence context and the relevant applications are extended beyond the external subjects or entities of the organizations. As much as they are crucial for the organizations to improve their internal intelligence and analytical capabilities, it is most important and critical that the capabilities extend to the customer services as well in the different patterns of the relationships (Foley & Guillemette, 2010). The conceptualization of the business intelligence process capability reflects the extent of business intelligence penetration into the main business processes (Fadler & Legner, 2020). As a

process identifies sets of logical related tasks conducted in order to accomplish sets of defined goals, the major focus of the process is over the international goals of the business. Hence, in some studies (e.g) this concept can be conceptualized through different process capability dimensions such as Customer Centric business intelligence, and Business To Business B2B Centric business intelligence. The business intelligence process capability refers to the ability to deploy business intelligence functions to accommodate or support the customer and B2B centric operations (Bucher, 2009). Customer Centric business intelligence enables the organizations to be customer-oriented and focus. B2B centric process capability on other hand refers to the ability of the business intelligence to improve B2B engagement and supply chain applications (Bolton, 2004). This further would enable the organizations to respond to customer needs and requirements. Business intelligence for customer focus and retention encompasses some key elements which play a role to improve the customer satisfaction and loyalty and provide insights related to customers' long term preferences (Rastegar & Hakaki, 2020). Hence the business intelligence reflects the ways are oriented to retain the key customers and increase their satisfaction. Therefore, the study formulates the following research hypothesis.

H2: process capability positively influences business outcomes of SMEs.

2.3. Integration Capability

To use the business intelligence capabilities, today's organizations require to build up as well as integrate such capabilities which enable develop news methods and ways to acquire or covert the business intelligence capability toward overall organizational developments (Ramakrishnan et al., 2018). The literature has stated that the business intelligence integration capability is very important for successful usage of the business intelligence (Nofal & Yusof, 2013). Integration indicates to combine many different types of data within relationship and pattern. In this respect, the conceptualization of the business intelligence integration capability refers to data acquisition, conversion and integration for analysis and related mechanisms and tools to use for business intelligence (Isik et al., 2011). Others defined the business intelligence integration capability as ability to manage and deploy the functions required to acquire also integrate he business intelligence within a system (Torres et al., 2018). Business intelligence integration capability moreover comprises of two major functions; acquisition and conversion. The first comprises of data collection from different sources across the organization. The data aggregation and partitioning comprises also data extracted from the operational system that is important to clean and transform the data to be suitable for usage without errors (Herschel and Jones, 2005). Meanwhile, the conversion is also important for effective utilization of the business intelligence within the organizations. Hence, business intelligence integration also consists of data acquisition from different sources, and followed by data conversion into the appropriate format and quality to effectively use this aspect in the business operations (Horakova & Skalska, 2013). Therefore, the study formulates the following research hypothesis.

H3: integration capability positively influences business outcomes of SMEs.

2.4. Competitive Intelligence

The business intelligence is seen as approach of information-collection to analyze and usage in the organizations. The collection process concerns with the public data and information that is also accessible and not secured. In general, the phase of the concept formalization of the business intelligence to a narrow formalization has been generated through various sources of information which explained with high expansion and dispersion of information and communication technology (Anica-Popa & Cucui, 2009). Moreover, the concept of business intelligence has been integrated to the control systems of the organization in the competitive environment within its mission to monitor the different changes in this environment (Bulger, 2016). This could lead collecting, processing and analyzing in the real time of different types of information to be used to the competitive advantage emergence and facilitate the organizational achievements (Ranjan & Foropon, 2021). In fact, the factor of competitive intelligence is seen as a result of new situation convergence for economic and information competition

(Köseoglu et al., 2016). In this regard, the information as a strategic asset for organizations requires passages of collection, analysis, management, and privacy to make the right strategic decisions. The distinction between the concepts of business intelligence and competitive intelligence shows that the first through the information flow with the systematic monitor cause a congestion or may delay of the decisions due to the organizations looking for the best information before deliver business syntheses (Poblano-Ojinaga, 2019). Further, the competitive intelligence concept is more equivalent to the planned strategies and lead to comprehensive and detailed analysis of the valued information although the constraints (Stefanikova et al., 2015).

Competitive Intelligence CI has gained some attention among the different practitioners and scholars and it has appealed various focus resulting its key effect and role in shaping the businesses enterprises strategic decisions making processes and outcomes (Mohsin et al., 2015). The studies that examined the effect of CI refer this factor in the relationship between different variables as an evolving procedure used by the organizations to assess the competencies as well the values of the existing and possible rivals in the markets and to sustain the business competitiveness (Trong Tuan, 2013). On other hand, the moderating role of CI as stated by Rouach and Santi (2001) is generally applied within the processes to track the key activities of potential different types of competitors which include their main business operations, activities, strategies, and policies within the key business aspects like products development, patents registration, and markets penetration. The key objectives of CI including general understand of the company's competitors and industry; identify the aspects of competitors' vulnerabilities (Calof and Wright 2008); then access the important actions of the competitors' reactions. The moderating role of CI thus while addressing the relationship between business intelligence and business outcomes enable the businesses to rightly identify the possible opportunities and threats in the respective environments (Tej Adidam et al., 2012). CI is seen as the company's mechanism used to transform the competitors' information into external actions, hence the company can further gain business outcomes and stay ahead with the market competition. Additionally, due to the role of CI on business performance (Tarek & Adel, 2016), it can add more innovative forces to the exploratory forces of the organisational capabilities in enhancing promoting required outcomes. Therefore, the competitive intelligence is more broader and globalizing than business intelligence which is not limited to specific area, but it is a multidimensional term which aims for business survival and growth. Therefore, the study formulates the following research hypothesis.

H4: the competitive intelligence moderates the relationship between business intelligence capabilities and business outcomes of SMEs.

3. Method

The current research adopted a quantitative research method to conduct this study and achieve its objectives. This approach since the study concerns to address the sample perspectives about the relationship between business intelligence capabilities and business outcomes and the moderating role of the competitive intelligence. The conceptual framework is illustrated in Figure 1 shows sets of hypothesized research statements. The framework presents that the independent construct (business intelligence capabilities with three sub-variables) which assumed have a relationship and predict the dependent variable (business outcomes). In addition, competitive intelligence is hypothesized to significantly moderate the relationship between business intelligence capabilities and business outcomes. The study sample included different SMEs operating in Jordan. The study used the convenience sampling approach for data collection purpose which easily reach out the target sample and collect adequate responses (Etikan & Bala, 2017).

The study also interested to broaden the participation in this study through involve appropriate participants to well represent the study sample with different backgrounds to enrich the research findings. By using a survey questionnaire approach to collect the data, the study developed an instrument based on the previous relevant studies through reviewing the relevant literature. Importantly, the validation process of the measurements was conducted before survey distribution by a panel of experts (academics staff at Jordanian universities) to review the appropriateness of variables measurements. Some modifications were given and recommended from those experts such as add new items and revisit others. The data collection frame time was extended some several weeks, with a total of 319 SMEs owners and managers were involved in the current analysis.
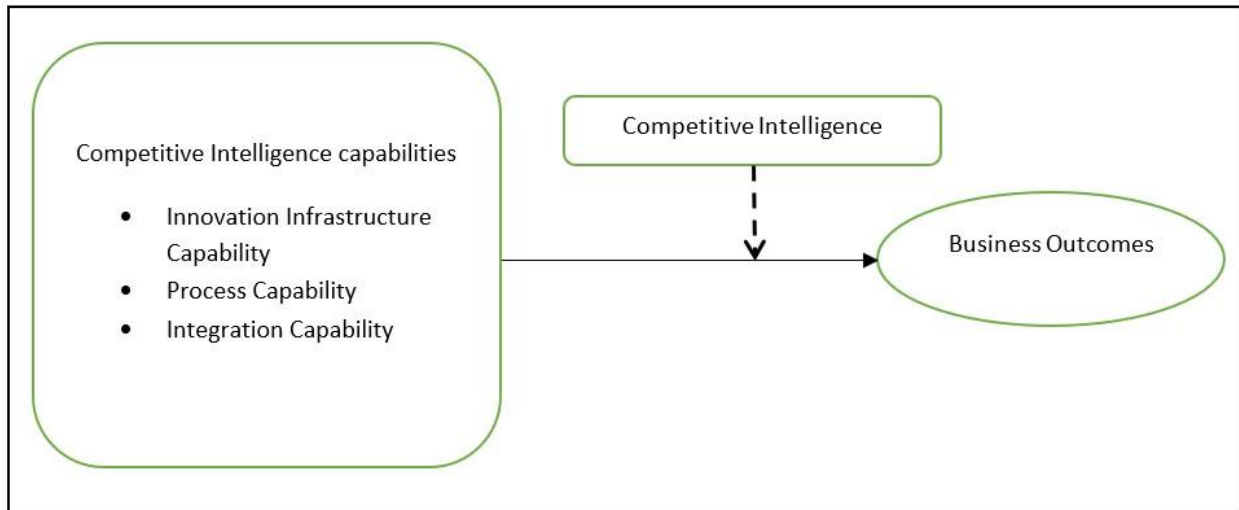

Fig. 1: Conceptual Research Framework.

The measurements of the independent research variable were measured by three sub-variables namely: innovation infrastructure capability, process capability, and integration capability. All these sub-variables were measured by adopted and adapted items from relevant literature (e.g Xu et al., 2022; Stefanikova et al., 2015; Ramakrishnan et al., 2016) using five-point Likert scale ranked as (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree) and mostly they have coded with unique codes for analysis purposes.

The research measures have been reviewed and adapted to be fit with the aim of this study and they were modified for better understanding among the participants. The measures moreover involve within some procedures that generally used to ensure they are appropriate with their contents and validity that can meet the study objective. The sources of these measures are expanded with a focus on SMEs environment due to the difference of this setting of business that need clear measures of the factors. furthermore, the research to evaluate these measures follow the traditional validity procedures that include content and construct validity through statistical actions such as reliability scales of them and wording of the statements to be translated into Arabic version prior being distributed to the participants. The literature through reviewing those measures provide plenty of them but the researchers consider only the items that used in a similar developing contexts especially Arab studies (e.g Ahmad & Mustafa, 2022; Ali & Anwar, 2021).

By using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach, the study conducted the key analysis procedures which include different statistical tests like path coefficients, validity and reliability of the measurements. This approach is highly suggested to use in the social studies due to the many important tests and analytical procedures can be given and provided in this method (Hair et al., 2019). A suggestion to use this approach comes from the benefits that enable the modern research to analyse many variables together. The empirical findings also recommend integrate this analysis in the social science studies due to the validity and reliability related tests provided in PLS-

SEM software (Hair et al., 2019). However, the current research aims to analyse two common major types of models called measurement model and structural model, the measurement model is mainly used in the studies in order to validate the respective model and test the indicators' reliability through different types of validity such as convergent validity, on other hand the structural model used to test the hypothesized research model (Hair et al., 2017).

4. Results

The given study results were presented by using the software of SmartPLS3 which generally used in these types of studies. The approach of SEM-PLS provides key statistical findings which also help the research to offer good perspectives about the study results. Thus, this study used this method due to the ability to analyze these perspectives and properly process the data through sets of procedures like validation types (Sarstedt et al., 2016). Furthermore, PLS-SEM approach also illustrate better understanding about the issues are being addressed in the research works and they can handle complicated issues within a single research model (Hair et al., 2017). In general, this study has run two types of models that generally used in this analysis called measurement model and structural model.

4.1. Measurement model assessment

In general, the measurement model to be evaluated requires to conduct firstly the validity of the indicators to ensure their ability to measure the respective constructs. Hair et al. (2017) suggested some different statistical tests to carry out this analysis, for instance the factor loadings of the variables' indicators which explain the variance of these indicators to measure these variables. the process of testing these indicators can be performed through the reliability which calculated by common approach called Average Variance Extracted AVE, Composite Reliability CR and Cronbach's Alpha in this analysis (Afthanorhan et al., 2020). The variables' reliability is a critical aspect of the measurement model analysis, thus the current study run this analysis to check the reliability issues using the PLS-SEM. Table 1 presents the results of this analysis which analyzed the convergent validity through AVE and CR and the results found good outputs of the measurement model and mostly met a satisfactory level. The results also indicated acceptable ranges of >0.50 and >0.70 respectively of the convergent validity (Fornell & Larcker, 1981). Moreover, the results of the measurement model confirmed the variables' reliability and validity. The first run of this model revealed four indicators with low factor loadings (<0.70) but mostly the research variables' validity and reliability were good (>0.50 and >0.70).

Table 1. Descriptive Statistics, Validity, & Reliability.

Construct	Items	Mean	SD	FL	Alpha	CR	AVE
Innovation infrastructure capability	Inno1	3.72	0.73	0.77	0.73	0.85	0.65
	Inno2	3.64	0.79	0.69			
	Inno3	3.66	0.76	0.84			
Process capability	Proc1	3.61	0.80	0.79	0.61	0.79	0.56
	Proc2	3.74	0.66	0.77			
	Proc3	3.51	0.72	0.78			
Integration capability	Inte1	3.53	0.62	0.72	0.65	0.81	0.59
	Inte2	3.62	0.68	0.83			
	Inte3	3.63	0.67	0.80			
Business outcomes	Outcome1	3.60	0.69	0.80	0.76	0.84	0.52
	Outcome2	3.70	0.73	0.84			
	Outcome3	3.60	0.75	0.82			
	Outcome4	3.60	0.72	0.75			
	Outcome5	3.61	0.73	0.75			
Competitive intelligence	Comp1	3.56	0.72	0.81	0.65	0.79	0.50
	Comp2	3.63	0.74	0.83			
	Comp3	3.53	0.76	0.82			
	Comp4	3.52	0.73	0.81			

*SD= standard deviation; FL=factor loadings.

The study further interests with examining an issue related to the validity by another type of validity called discriminant validity which generally used to evaluate how the research constructs are correlated or represent unique concepts. Henseler et al. (2015) stated this validity procedure that performed to check this validity through cross-loading approach. The study also conducted critical needed analysis namely Fornell-Larcker and Heterotrait-Monotrait (HTMT) that are important and they indicate the variables correlations. The findings given in Table 2 and Table 3 were calculated by the square root the AVE and they illustrated in the bold off-diagonal cells which the correlations itself were more than with other variables' correlations (Fornell & Larcker, 1981). Further, the measurement model found good results of the discriminant validity, hence the study involved with another approach of HTMT as another analysis process used to assess this validity. The findings given in Table 3 found that the HTMT achieved good threshold of ($\leqslant 0.90$) (Kline, 201) therefore, this meet the required analysis of the discriminant validity of HTMT.

Table 2. Fornell-Larcker Criterion.

	Variables	1	2	3	4	5	6
1	Business intelligence capabilities	**0.656**					
2	Business outcomes	0.651	**0.721**				
3	Competitive intelligence	0.435	0.669	**0.701**			
4	Innovation infrastructure capability	0.604	0.477	0.402	**0.810**		
5	Integration capability	0.584	0.598	0.598	0.502	**0.770**	
6	Process capability	0.535	0.617	0.518	0.611	0.605	**0.749**

Table 3. Heterotrait-Monotrait (HTMT) Ratio.

	Variables	1	2	3	4	5	6
1	Business intelligence capabilities						
2	Business outcomes	**0.827**					
3	Competitive intelligence	0.807	**0.879**				
4	Innovation infrastructure capability	0.738	0.625	**0.578**			
5	Integration capability	0.685	0.838	0.760	**0.717**		
6	Process capability	0.695	0.898	0.647	0.895	**0.854**	

4.2. Structural model assessment

The next model is structure model which is the second phase of PLS-SEM analysis. The process of structural model assessment includes main recommended tests that agreed among many different scholarly works and it is importantly to conduct to test the stated research hypotheses. Hair et al (2017) stated this important critical analysis process that mainly performed in order to get required findings enable clearly evaluate the model goodness. In fact, this study depends on the main common findings conducted in this analysis like path estimates, t-value and p-value to make a clear review and decision about research hypotheses in term of accept or reject them. The analysis used the approach of bootstrapping as illustrated in Figure 1 to gain the results of direct effects as given in Table 4. The results found that the dimensions of business intelligence capabilities (innovation infrastructure capability, process capability, and integration capability) had a significant influence on business outcomes ($p < 0.05$), therefore the results supported all respective research hypotheses.

Table 4. Hypotheses Testing.

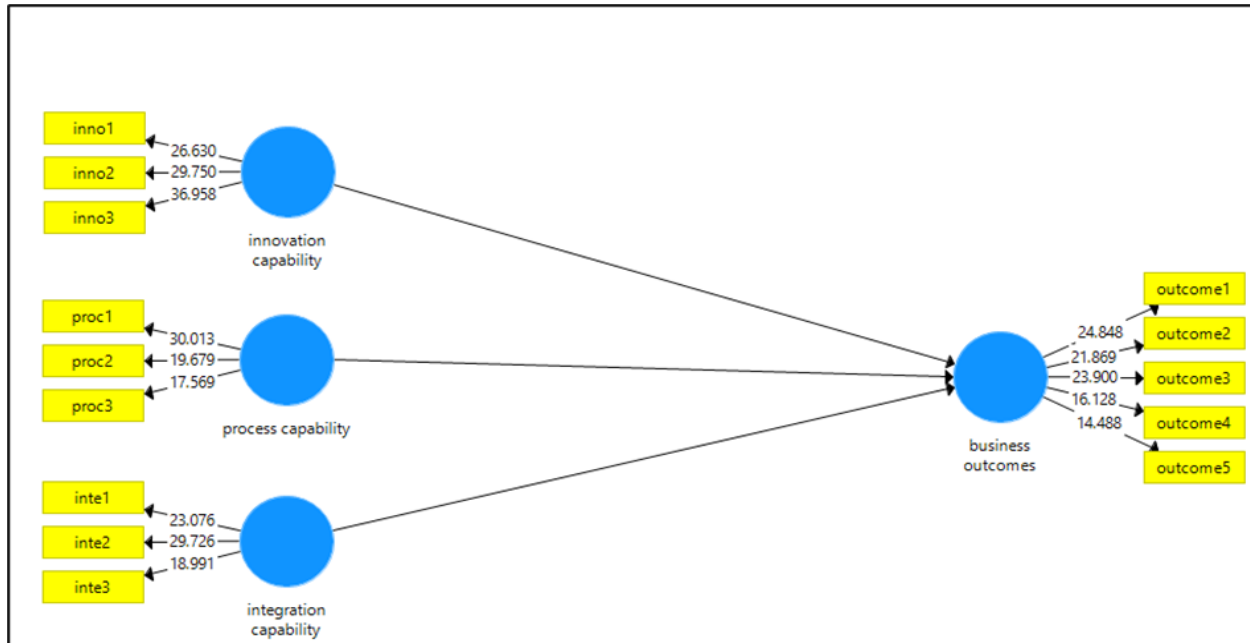|	Hypotheses	Beta	T-value	P-value	Result
H1	Innovation infrastructure capability → business outcomes	0.187	2.550	0.004	Supported
H2	Process capability → business outcomes	0.356	5.315	0.000	Supported
H3	Integration capability → business outcomes	0.345	5.789	0.000	Supported
	R^2 for business outcomes	0.444			
	Q^2 for business outcomes	0.224			

Fig. 2: Structural Research Model.

Further, the study also involved with another important tests suggested by professionals (Hair et al., 2017) and stated this analysis is significantly to be checked within the empirical studies and which is associated with the variance explained the dependent and called coefficient of determination (R2) and the cross-validated redundancy (Q2) that they are crucial to checked since they indicate the model quality and prediction. The results of the structural model explained 44.4% of the variance in the business outcomes. Since the findings had ranged from 0 to 1, the data of the structural model confirmed a good explanatory power (Shmueli et al., 2019). To check the model goodness about its prediction, the study also analyzed the predictive value of Q2 of the dependent variable which exceed zero value and this assert the analysis, and the result is given in Table 4 which supported this assumption.

4.3. Moderation analysis

The current study examined competitive intelligence as a moderator to predict competitive intelligence's moderation mechanism between business intelligence capabilities and business outcomes. The moderation analysis in this study include was conducted through PLS-SEM approach that provide path coefficients of the moderator with the key analysis outputs. And they present and give clear decision about this type of analysis by t-value and p-value that they refer to the statistical analyses used within the most studies to whether accept or reject the hypothesized moderation path. However, the results in Table 5 illustrates that competitive intelligence has positively and significantly moderated the relationship between business intelligence capabilities and business outcomes (P=<0.05). Moreover, the findings revealed a moderation role of the competitive intelligence, and confirmed this role over the respective path. Confirming the moderating effect of the competitive intelligence in this relationship was supported through the given findings which stand in line with the research aim and expand the growing concerns of addressing this variable in the recent studies.

Table 5. Moderation Analysis

	Hypothesis	Beta	T-value	P-value	Result
H4	Business intelligence capabilities*competitive intelligence → business outcomes.	0.110	2.554	0.000	Supported

5. Discussion & Implication

Since the aim of this study is discussing and exploring the relationship between business intelligence capabilities and business outcomes. The empirical study findings demonstrated that business intelligence capabilities increased the business outcomes. And the moderation effect of the competitive intelligence also showed a significant effect in this relation β = 0.110. SMEs in Jordan confirmed the importance of having various business capabilities across the markets changes to improve information quality, and this enable the SMEs to effectively respond to the market changes. The findings on other hand confirmed the need to develop innovative infrastructure capability, and this result indicate that the relationship between innovative infrastructure capability and business outcome can differ based on the considering the moderating effect of competitive intelligence. Our results on the effects of process and integration capabilities and business outcomes are consistent with the body of literature and some prior studies (e.g Zheng et al., 2012; Olszak, 2014), but provided new research insights into the relationship between all of these variables in developing business outcomes. Stefanikova and others (2015) suggested that the competitive intelligence can be originated in the marketing field and thus it is known as "marketing intelligence" which has evidenced further developments.

Moreover, the findings suggested that innovation capability has a direct effect on the business outcomes of the SMEs. And the competitive intelligence was recognized as moderator in the respective relationship. The competitive intelligence is still seen as a marketing aim for organization, but currently it has a complex aspect and becomes more efficient if the organizations are involved in more diverse activities. Accordingly, the results stand in line with the literature in this discussion and confirmed the complex competitive intelligence which is a benefit can be measured by different outcomes (Knabke & Olbrich, 2018). The investment returns for example of the SMEs are commonly used the financial measures of the competitive. The results of this study also supported some indicators which are used within the enterprises for projects assessment. The selection of SEMs in this research on the different intelligence capabilities adds new dimensions to the existing relevant literature and contributes to fulfill the research gaps. For example, the previous studies (e.g Chen & Lin, 2021) focused solely on the direct relations between business intelligence capabilities and firms' performance and leave a gap to understand with regard direct effect of innovation, integration and process capability on SMEs' outcomes. The study also contributes to bridge a further research gap through conducting a multi-exogenous structural equation model to test the concerning research relations.

The result of the significance of the competitive intelligence has increased a research area that has developed not from business point of view. The scientific literature during the last years of the 21th century began to create and apply business intelligence method and techniques related to the development of the concept of business (Ranjan & Foropon, 2021). The findings supported the growing challenges in the today's business environment which also presents emerging issues requiring to consider through the globalisation consequence as well the interests of external factors that shaped and changed the dynamic environments. Furthermore, the concept of competitive intelligence showed a link to examine the business environments, where the processes of information analysis about the firms' competitors is importantly to be collected and analysed which enable the organizations to go through the weakness and strengths of the competitors (Hossain et al., 2022). In other hand, other parts of the competitive intelligence like marketing Intelligence can be seen a part of the business's strategy to

achieve the competitive intelligence. This research has conducted a literature review bout interrelationship between competitive intelligence and business intelligence capabilities as the main objective of the study has to detect this topic that mostly addressed by the scholars regarding to the effect of competitive intelligence. At the same time, the study underlines the relevant literature that has received low focus. Hence, supporting the research scope and community for future research avenues to offer more perceptions that can facilitate the best practices of business intelligence in the business organisations.

The theoretical research implications have been given in the field of business intelligence. The findings comply with the theory of TAM model investigations the concern with applying the technology within business activities and operations. An added a new variable into a recent model has not example before would enhance the implications of the theory and model with a further grasp of a theory and its implementation in different settings. The study gained findings connect some ideas with the theory of using the technology among the business activities. Although the plenty of studies that addressed and examined the effect of business intelligence capabilities on organizational aspects like performance, this study is amongst the novel attempts that consider competitive intelligence as a factor can reach out business outcomes. However, the study highlighted the significant important of developing innovative infrastructure with further integration of the intelligence capability for markets opportunity responding, and collected survey data from 319 SMEs' managers and owners operating in the developing context of Jordan. And this provided empirical support for the concerning relationship in the uncertain environment. While the business intelligence capabilities were widely discussed in the literature, to the best knowledge of the researcher, this study is the first work that theoretically debates several capabilities together for leveraging the discussion in the business intelligence context to increase the great outcomes of the organizations.

The practical research implications, the business intelligence capabilities implementation showed an important role (Horakova & Skalska, 2013), the empirical evidences for illustrating the best practices of this factor. In addition, the study contributes to the better grasp of how the superior business intelligence capabilities within the organizations by enhancing the information and data quality with innovative and integrating capability. The research results showed a positive linkage between competitive intelligence and business outcomes (H4). This result showed that the relevant high-quality data and information can help the organizations to adapt within the markets changes (Fadler & Legner, 2020). The practical implications are the direct effect of the study findings on the related practices in the field being addressed in this study. They also can enhance the existed knowledge associated with the practical aims to solve real-life issues and problems. These implications would guide the practitioners on implement the study results for their business outcomes and benefits.

6. Conclusion

The research had achieved the stated key study aims and addressed the respective relationship between business intelligence capabilities and business outcomes of the SMEs in Jordan with moderating effect of competitive intelligence. The main study findings revealed all aspects of the business intelligence capabilities which showed significant effect on the business outcomes. The subsequent analysis of the moderation also found that the competitive intelligence moderated all business intelligence capabilities on business outcomes. However, the relevance of the competitive intelligence showed a significant positive value of the beta coefficient on the business outcomes. Accordingly, the study essential results as they are important for the SMEs management and policy makers to consider with much attention on this role by integrated capabilities to enhance their competitiveness in the marketplace. Currently, all businesses pursue to differentiate their operations to this purpose and diversify the forms of the business intelligence practices to ensure great outcomes and benefits to be survived. The expanding of the understanding this issue can also support the business developments and growth and play a role in developing the overall performance which in turn lead to achieve the favorable outcomes. During the

time of conducting this research work, the study matched with the previous results as well consistent with their findings among the given discussions.

The implications of the study regarding the business intelligence capabilities suggested to better perception about the different characteristics of the business strategies and policies and the methods that the business operation can maintain these capabilities. Today's business operations and activities have different impacts, and the effects have been increasingly the changes among the modern business activities. Through the existed level of competitive intelligence, the organization nowadays are requested to create effective capabilities to capture the future potential opportunities and investments. The study recommendations for business intelligence practices for the practitioners are connected generally with the diversifications of these capabilities and the competitive intelligence aspect to influence the key business goals with effective integration of the business capabilities.

The research limits are connected to the suggested research model that includes the stated variables in the proposed framework with the direct and indirect path among them. The targeted sample that involved in this study and their perceptions can limit the general investigation of business intelligence and this call for expanding different sample perspectives with new business background and industries. Also, they restrict the opportunity of generalizing the research results into different contexts and sample, and this limit the proposed factors that examined in this research across the hypothesized research model. The future studies might contrast the present study results with their results to identify new variations. The research directions could suggest possible research works which significantly increase the understanding the issue of business intelligence capabilities and its role on key business operations. A suggestion for future analysis to adopt different contextual settings for more explanation of this topic. The future potential studies also would consider the limits in this study and cover the missing issues and research aspects for comprehensive field coverage for example involving new modern factors and paths have not explored before.

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