





# “Strategic enablers of business intelligence in marketing: Insights from the digital transformation of Jordanian firms”

<b>AUTHORS</b>	Mohammad Mahmoud Saleem Alzubi   Abdelaziz Saleh Mohammad 
<b>ARTICLE INFO</b>	Mohammad Mahmoud Saleem Alzubi and Abdelaziz Saleh Mohammad (2026). Strategic enablers of business intelligence in marketing: Insights from the digital transformation of Jordanian firms. <i>Innovative Marketing</i> , 22(2), 71-82. doi: <a href="https://doi.org/10.21511/im.22(2).2026.06">10.21511/im.22(2).2026.06</a>
<b>DOI</b>	<a href="http://dx.doi.org/10.21511/im.22(2).2026.06">http://dx.doi.org/10.21511/im.22(2).2026.06</a>
<b>RELEASED ON</b>	Thursday, 16 April 2026
<b>RECEIVED ON</b>	Wednesday, 22 October 2025
<b>ACCEPTED ON</b>	Thursday, 02 April 2026
<b>LICENSE</b>	 This work is licensed under a <a href="https://creativecommons.org/licenses/by/4.0/">Creative Commons Attribution 4.0 International License</a>
<b>JOURNAL</b>	"Innovative Marketing "
<b>ISSN PRINT</b>	1814-2427
<b>ISSN ONLINE</b>	1816-6326
<b>PUBLISHER</b>	LLC “Consulting Publishing Company “Business Perspectives”
<b>FOUNDER</b>	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

59



NUMBER OF FIGURES

0



NUMBER OF TABLES

6

© The author(s) 2026. This publication is an open access article.



## BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"  
Hryhorii Skovoroda lane, 10,  
Sumy, 40022, Ukraine  
[www.businessperspectives.org](http://www.businessperspectives.org)

**Type of the article:** Research Article

**Received on:** 22<sup>nd</sup> of October, 2025

**Accepted on:** 2<sup>nd</sup> of April, 2026

**Published on:** 16<sup>th</sup> of April, 2026

© Mohammad Mahmoud Saleem  
Alzubi, Abdelaziz Saleh Mohammad,  
2026

Mohammad Mahmoud Saleem Alzubi,  
Associate Professor, Faculty of Business,  
Department of business, Middle East  
University, Jordan. (Corresponding  
author)

Abdelaziz Saleh Mohammad, Assistant  
Professor, Faculty of Business,  
Department of Business Intelligence,  
Middle East University, Jordan.



This is an Open Access article,  
distributed under the terms of the  
[Creative Commons Attribution 4.0  
International license](https://creativecommons.org/licenses/by/4.0/), which permits  
unrestricted re-use, distribution, and  
reproduction in any medium, provided  
the original work is properly cited.

**Conflict of interest statement:**

Author(s) reported no conflict of interest

Mohammad Mahmoud Saleem Alzubi (Jordan), Abdelaziz Saleh Mohammad (Jordan)

# STRATEGIC ENABLERS OF BUSINESS INTELLIGENCE IN MARKETING: INSIGHTS FROM THE DIGITAL TRANSFORMATION OF JORDANIAN FIRMS

## Abstract

Investments such as technological investments in useful marketing intelligence are an important organizational challenge because companies raise the pace of their digital transformation activities. The research is based on the Resource-Based View and Dynamic Capabilities Theory and aims to investigate how the data on important organizational and technological enablers' data-driven culture, technological readiness, top management support, and marketing analytics maturity influence Business Intelligence (BI) capability in marketing functions. The primary data were gathered between February and May 2025 with the help of a structured online survey among the marketing managers, BI specialists, analytics professionals, and IT decision-makers, working in Amman, Irbid, Zarqa, and Aqaba, Jordan. Based on a purposive sampling technique, 602 valid responses were interpreted with the help of Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings show that Marketing Analytics Maturity has the most significant impact on BI capability ( $\beta = 0.367$ ,  $p = 0.001$ ), then Data Culture ( $\beta = 0.321$ ,  $p = 0.001$ ) and Technological Readiness ( $\beta = 0.287$ ,  $p = 0.01$ ). The positive, relatively weak effect ( $\beta = 0.224$ ,  $p < 0.05$ ) is demonstrated by Technology Readiness. The structural model shows significant explanatory power and explains 78.1 percent of the variance on BI capability. Such results indicate that building BI capabilities among emerging market companies is not as much about acquiring technology, but rather about integrating managerial support and analytics maturity, which emphasizes the importance of readiness in an organization in changing digital investments into the value of marketing intelligence.

## Keywords

business intelligence, analytics, leadership,  
infrastructure, culture

## JEL Classification

M31, C38, L86, M15

## INTRODUCTION

The growing accessibility of digital data has radically altered the process of marketing decision-making, modifying organizational expectations of descriptive reporting on the practice of predictive and prescriptive analytics that are utilized to support the strategic planning and customer engagement (Figueiredo et al., 2025; Leung et al., 2025). As part of this shift, Business Intelligence (BI) systems have come to the forefront of the contemporary marketing management, where they provide tools to transform the scattered information into actionable insights (Alhur et al., 2025; Chen et al., 2025). Companies of all sectors are thus reinforcing the use of BI technologies in larger digital transformation plans (Martins et al., 2025). Even with such investments, most organizations have failed to achieve strategic value of BI in marketing situations. Even the previous literature indicates that BI initiatives often fail not due to the inability of technologies, but because of the organizational factors including the lack of managerial dedication, the lack of analytical skills, or the lack of data-oriented culture (Exner

& Zunic, 2025; Chongwatpol, 2025). The failure of the marketing functions to incorporate the outputs of analytical processes as part of the normal decision-making process inhibits the role of BI in creating competitive advantage when BI is more of a technical infrastructure than an organizational capability (AL-maaitah, 2025).

These issues are especially relevant in the case of new market settings, where the quality of digital infrastructure, the institutional maturity, and the availability of analytical skills are not evenly spread (Touijer & Elabjan, 2025). Even though the adoption of BI in developed economies is deeply researched, empirical data in the emerging markets is quite scarce (Caiado et al., 2025). Moreover, a significant portion of the existing literature explores determinants of BI success alone, which does not provide much information concerning the interplay of organizational, technological, and analytical enablers in the formation of BI capability in marketing domains (Hasan et al., 2026). As a result, a crucial scientific issue is that although the significance of organization preparedness and technological infrastructure to BI adoption is universally recognized, the mediating process by which these two enablers collaborate to create marketing-related BI capability in the emerging market enterprises is not clearly comprehended. It is imperative to fill this gap as a way to broaden theoretical insights on the development of digital capabilities as well as to inform companies on how to turn data resources into strategic marketing information.

---

## 1. LITERATURE REVIEW AND HYPOTHESES

The creation of Business Intelligence (BI) capability in the marketing functions of modern business settings has steadily evolved to be a strategic business need of the organization rather than a purely technical effort in the modern business landscape that is data intensive. Marketing units are progressively anticipated to create foresight and prescriptive understandings that meet the quality of decision-making process, customer interactions and competitive responsiveness. Nevertheless, earlier research always points to the fact that the effectiveness of BI projects cannot be explained by the technological advanced level only; instead, it is a result of the interplay between the organizational culture, management dedication, technological base, and data maturity (Hmoud et al., 2023; Golestanizadeh et al., 2023; Alzubi, 2025; Alobaydi et al., 2025). The change echoes an increasing agreement that BI capability is a multidimensional organizational competence as opposed to an information system on its own.

The existence of a data-driven culture is a key organizational precursor of BI capability, which can be described as a set of shared values, norms, and routines that facilitate the decision-making process based on evidence and the use of systematic data (Abu-ALSondos, 2025; Mohammed et al.,

2024; Alkhwaldi, 2024). The experimental data indicate that companies with strong data cultures have more BI adoption and more analytics are engrained in their regular marketing practices and are more dedicated to the development of analytical skills (Ghafoori et al., 2024; Hmoud et al., 2023). Conversely, weak data cultures tend to create a notoriously surface level BI utilization where the systems are used to report but not to shape the strategic marketing choices (Cadden et al., 2023; Abubakar et al., 2025; Atieh et al., 2023). Additionally, the culture of data improves organizational learning because it allows marketers to test assumptions, measure the effectiveness of their campaigns, and change strategies based on real experience (Kazemi & Soltani, 2024). Altogether, these results denote that the cultural preparedness is one of the preliminary conditions of developing BI competency within marketing functions.

In addition to cultural influences, the quality of technological infrastructure to facilitate data integration and analytics determines the success of BI initiatives to a large extent. Technological infrastructure includes data warehousing systems, analytics platforms, dashboards, and real-time processing tools, their compatibility, as well as scalability (Ragazou et al., 2023; Bao et al., 2023). Previous research underlines the following importance of solid infrastructure: it will allow marketing departments to combine the

diversity of data sources, such as customer relationship management systems, social media platforms, web analytics, and external data providers (Brewis et al., 2023). On the other hand, poor or incomplete infrastructure causes slow analysis, data discrepancies, and unreliable information, which restricts the strategic value of BI systems (Qatawneh & Al-Okaily, 2024). The importance of the strategic role of BI in marketing decisions is further supported by the recent empirical studies showing that scalable and flexible digital structures contribute to the responsiveness of the organization to the market environment and the changing consumer behavior (Raman et al., 2024; Wang et al., 2024).

Another important antecedent of BI capability development is managerial commitment. Top management supports the levels at which senior leaders are actively involved in supporting the BI initiatives in terms of resource utilization, strategic prioritization, and promotion of the practices of data-driven decisions (Ragazou et al., 2023; Syalevi et al., 2024). The involvement of leadership will indicate the significance of BI as a strategic tool to the marketing units, which will facilitate the alignment of the organization and facilitate user adoption. The empirical research shows that the top management needs to be engaged throughout the BI implementation and throughout the system value and continued use (Kongthanasuwan et al., 2023). The active use of BI dashboards, support of evidence-based discussion, and alignment between BI programs and corporate goals will help senior leaders to provide an environment in which analytical decision-making becomes possible (Kyaw et al., 2023). Besides, transformational leadership has been demonstrated to defuse resistance to change through a clear data-driven marketing transformation vision (Olaniyi et al., 2023).

Besides the organizational and management factors, there is the maturity of the marketing analytics in the firm which also affects the BI capability. Marketing analytics maturity indicates how far organizations have progressed to have established or organized processes, technical skills, and governance structures of sophisticated data analysis and interpretation (Ramalingam et al., 2024). This level of maturity

is also not limited to the process of collecting data but also to the process of forecasting, model validation, experimentation and continuous performance evaluation. According to previous studies, organizations having a higher analytics maturity level are in a better position to ensure that they take advantage of the BI tools as they have the analytical mind and technical capabilities of converting the visual outputs into actionable marketing tactics (Rigamonti et al., 2024; Shiau et al., 2023). Continuous learning and adaptive targeting that are required in an ever-changing and competitive marketing environment are also supported by analytics maturity. Although available literature recognizes the personal significance of data-oriented culture, technological infrastructure, leadership support, and analytics maturity, these antecedents are often studied independently. Marketing BI capability, nevertheless, develops because of a relation between cultural preparedness, management dedication, technology assets, and analytical skills. There is still scarce empirical evidence based on emerging market contexts especially on integrated models that study these enablers as a cluster. To fill this gap, the current paper formulates and experiments a holistic model where the culture of organizational data is driven, the technological infrastructure, the support of top management, and the maturity of marketing analytics converge to determine BI capacity in the marketing functions of companies operating in Jordan. The following are the hypotheses that can be made based on the reviewed literature:

- H1: *Organizational Data Culture has a significant positive relationship with Business Intelligence capabilities in marketing.*
- H2: *Technological Infrastructure has a significant positive relationship with Business Intelligence capabilities in marketing.*
- H3: *Leadership Support has a significant positive relationship with Business Intelligence capabilities in marketing.*
- H4: *Analytics Maturity has a significant positive relationship with Business Intelligence capabilities in marketing.*

## 2. METHODOLOGY

The research design used in the study was a quantitative study in which the antecedents of Business Intelligence (BI) capability in the organization and technology were investigated in relation to the marketing functions. The structural relationships were tested using quantitative approaches to provide empirical support and support an analytical rigour with the help of descriptive, inferential, and multivariate statistics. The research conceptualization was created upon a comprehensive review of the previous literature related to the topic of organizational data-driven culture, technological readiness, leadership support, analytics maturity, roles in the formation of BI capability in marketing situations (Gordon & Thompson, 2024; Pour et al., 2023; Ali et al., 2021; Nasiri et al., 2020; Almajali et al., 2016).

The structured, self-administered questionnaire based on validated measurement instruments was used to collect primary data to guarantee content validity (Alrifae, 2025). The sample size was composed of marketing experts, analytics specialists, and BI-related decision-makers working in the medium-sized and large companies, based in Jordan. The empirical context was Jordan because of the country being an emerging market with the current development of digital infrastructure and the growing use of marketing technologies. The data were collected in terms of firms in Amman, Irbid, Zarqa and Aqaba which are the main technological and commercial hubs in the country.

Since there is no detailed sampling frame, the non-probability convenience sampling method was used. The infinity formula was used in determining the minimum required sample size with the confidence level of 95 percent and a margin of error of 5 percent, which gives the threshold of 400 respondents (Mahmoud, 2026; Sharabati et al., 2024; Obaid et al., 2022). The 850 online study questionnaires were sent to professional networks, such as LinkedIn, marketing forums, and organizational email databases, to cover the possibilities of non-response and data screening losses. The collection of the data was made in the period of March 15 and May 10, 2025. Screening and validation of data saw 602 useful responses retained to be analyzed.

The respondents were digitally literate and professionally experienced employees, and their schooling level was diploma to doctorate level. The survey was conducted voluntarily, and the academic value of the study was informed to the respondents before they participated. No personally identifiable data were taken and anonymity and confidentiality were ensured. Answering the questionnaire was considered as an informed consent.

Multi-item scales adapted to other previously tested scales were the operationalization of all the study constructs. The scales of organizational data-driven culture and technological infrastructure were assessed by means of scales suggested by Nasiri et al. (2020). The level of top management support was evaluated based on the instrument created by Almajali et al. (2016), whereas the level of marketing analytics maturity was determined with the help of the items modified by Pour et al. (2023). The dependent variable was BI capability in marketing, which was measured based on re-phrased items based on Yiu et al. (2020). Each of the measurement items was allocated to the five-point Likert scale ranging between 1 (strongly disagree) and 5 (strongly agree), while certain words were slightly changed to make it easier to understand and more context-specific.

Before the testing of the hypothesis, missing values, outliers, multicollinearity and normality assumptions were tested in the dataset. The SPSS version 25 was used to produce the descriptive statistics. Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) was used to perform measurement and structural model analyses with AMOS version 24. Cronbachs alpha and Composite Reliability (CR) were used to test construct reliability whereas Average Variance Extracted (AVE) was used to test convergent validity. The Fornell-Larcker criterion was used to determine discriminant validity (Alzubi, 2025; Ali et al., 2024). The Kaiser-Meyer-Olkin (KMO) measure and the test of sphericity by Bartlett were used to establish the sampling adequacy. The fit of the model was measured against the criteria of goodness-of-fit in the form of CMIN/DF, GFI, AGFI, CFI, TLI and RMSEA (Mahmoud et al., 2025; Marei, 2023; Ibrahim et al., 2021). The structural model was then estimated to show the hypothesized relationships between organizational

**Table 1.** Demographic characteristics

Variable	Category	Frequency	Percentage
Gender	Male	369	61.3%
	Female	233	38.7%
Age Group	20 – less than 30 years	108	17.1%
	30 – less than 40 years	275	43.4%
	40 – less than 50 years	143	22.6%
	50 years and above	107	16.9%
Education Level	Diploma or below	83	13.1%
	Bachelor’s degree	247	39.0%
	Master’s degree	67	10.6%
	Doctorate	25	4.0%
Monthly Income (JOD)	Less than 500 JOD	51	8.1%
	501 – 1,000 JOD	102	16.1%
	1,001 – 1,500 JOD	330	52.1%
	1,501 – 2,000 JOD	150	23.7%

data-driven-based culture, top-management support, marketing analytics maturity and BI capability in marketing. Out of 715 responses, 602 valid questionnaires were retained after the screening: 1) completeness and consistency screening and 2) analysis was conducted on valid responses. The demographic profile of the respondents is represented in Table 1. The sample was composed of 61.3% males (n = 369) and 38.7% females (n = 233). Most of the respondents were found to be aged 30-39 years (43.4), 40-49 years (22.6), 20-29 years (17.1) and 50 years and above (16.9). Education wise, most of them had a bachelor (39.0%), followed by a diploma or less (13.1%), masters (10.6%) and doctorate (4.0%). The largest percentage (52.1) was between 1,001 – 1,500 JOD monthly income.

### 3. RESULTS

The findings are presented in an orderly way in this section, among which are respondent characteristics, descriptive statistics, reliability and validity analyses of the measurement model, structural model-fit evaluation, and hypothesis testing outcomes (Tables 2-6).

Table 2 presents internal consistency reliability and descriptive statistics. The mean values were 3.41 with the lowest value of 3.87 with a tendency of positive perceptions on BI capability and its antecedents. BI Capability had the largest mean (M = 3.87, SD = 0.58), and Leadership Support had the lowest mean (M = 3.41, SD = 0.73). Internal consistency reliability was also satisfactory, with the

values of Cronbach’s Alpha -0.867 to 0.901 compared to the recommended value of 0.70 as an acceptable value of reliability (Nunnally, 1978; Hair et al., 2014).

Measurement model was tested with the help of Confirmatory Factor Analysis (CFA). According to Table 3, Composite Reliability (CR) was observed to be between 0.83 and 0.91, which is above the recommended level of 0.70 to construct reliability (Fornell & Larcker, 1981; Hair et al., 2014). The support of convergent validity was also justified because Average Variance Extracted (AVE) values were between 0.58 and 0.67, which was higher than the minimum required level of 0.50 (Fornell & Larcker, 1981). The reliability of the indicators was also good, with the factor loading of 0.64 to 0.86, which is higher than the recommended 0.60 (Hair et al., 2014).

Inter-construct correlations were used to test discriminant validity (Table 4). All the correlation was positive and significant at  $p < 0.01$ . BI Capability and Analytics Maturity ( $r = 0.703$ ) and BI Capability and Data Culture ( $r = 0.671$ ) had the strongest association. No correlation was found to have a correlation that surpassed the conservative value of 0.80, which would indicate that, there was no multicollinearity (Tabachnick & Fidell, 2007).

Table 5 presents structural model fit indices, which reveal that the model is adequately fit. The value of CMIN/DF was 2.344, which is lower than the suggested maximum of 3.0 (Hair et al., 2014). The

RMSEA was 0.045, which was less than the value of 0.08 meaning that the model is a good approximation (Browne & Cudeck, 1993). Incremental fit indices were also not within regarded levels (CFI = 0.948; TLI = 0.939; GFI = 0.927), which proves that the structural model fits well (Hu & Bentler, 1999).

The results of hypothesis testing are found in Table 6. All the postulated relationships were at the significant level ( $p < 0.001$ ) BI Capability was posi-

tively influenced by Data Culture ( $\beta = 0.321$ ,  $SE = 0.05$ ,  $CR=6.42$ ) which confirms *H1*. Technology Readiness had a positive impact on BI Capability ( $\beta = 0.287$ ,  $SE = 0.06$ ,  $CR = 5.71$ ), which confirms *H2*. The positive relation between Leadership Support ( $\beta = 0.224$ ,  $SE = 0.07$ ,  $CR = 4.49$ ) was also significant, which has been established in favor of *H3*. *H4* was supported by the strongest effect displayed by Analytics Maturity ( $\beta = 0.367$ ,  $SE = 0.04$ ,  $CR = 7.98$ ).

**Table 2.** Descriptive statistics and reliability analysis

Construct	Mean	Std. Dev.	Cronbach's $\alpha$
Data Culture	3.69	0.67	0.881
Technology Readiness	3.52	0.64	0.875
Leadership Support	3.41	0.73	0.867
Analytics Maturity	3.65	0.81	0.884
BI Capability	3.87	0.58	0.901

**Table 3.** CFA results and validity metrics

Construct	CR	AVE	Factor loadings (range)
Data Culture	0.87	0.62	0.65 – 0.83
Technology Readiness	0.85	0.60	0.67 – 0.81
Leadership Support	0.83	0.58	0.64 – 0.79
Analytics Maturity	0.89	0.67	0.70 – 0.85
BI Capability	0.91	0.66	0.71 – 0.86

**Table 4.** Correlation matrix (Pearson coefficients)

Variable	1	2	3	4	5
1. Data Culture	1				
2. Technology Readiness	0.583**	1			
3. Leadership Support	0.552**	0.567**	1		
4. Analytics Maturity	0.625**	0.604**	0.590**	1	
5. BI Capability	0.671**	0.641**	0.619**	0.703**	1

**Table 5.** Model fit indices

Fit index	Value	Threshold
CMIN/DF	2.344	< 3.0
RMSEA	0.045	< 0.08
CFI	0.948	> 0.90
TLI	0.939	> 0.90
GFI	0.927	> 0.90

**Table 6.** Structural model and hypothesis testing

Hypothesis	Relationship	$\beta$	SE	CR	p-value	Result
<i>H1</i>	Data Culture → BI Capability	0.321	0.05	6.42	<0.001	Supported
<i>H2</i>	Technology Readiness → BI Capability	0.287	0.06	5.71	<0.001	Supported
<i>H3</i>	Leadership Support → BI Capability	0.224	0.07	4.49	<0.001	Supported
<i>H4</i>	Analytics Maturity → BI Capability	0.367	0.04	7.98	<0.001	Supported

## 4. DISCUSSION AND IMPLICATIONS

This paper has discussed the role of data culture, technology preparedness, leadership endorsement, and analytics maturity in Business Intelligence (BI) proficiency of marketing functions of firms in the Jordanian environment. The findings indicate that all the four antecedents are significant positive influences on BI capability, which implies that BI capability is not developed directly by technology, but by the combination of organizational, managerial, and analytical preparedness. This observation confirms that BI in marketing is to be conceived as an organizational ability, as opposed to being a technical system.

Maturity of analytics was the best predictor of BI capability. This finding indicates that companies are better placed to transform BI tools into insightful marketing knowledge with well-organized analytical routines, qualified human resources, and defined data interpretation and action processes. Practically, it seems that BI systems offer more value when the organizations are able to not only gather and graphically analyze the data, but also to utilize that data in making predictions, testing, segmentation and maximization of performance. The result is not surprising given the previous research that has established a positive relationship between analytics maturity and the level of more sophisticated and strategically appropriate analytics output (Lismont et al., 2017; Cardoso & Su, 2022; Pour et al., 2023). The current paper is a continuation of this research line by demonstrating that analytics maturity in an emerging-market context is not merely conducive to BI capability but seems to be its most effective organizational base in the marketing sphere.

It is also demonstrated in its results that leadership support positively influences BI capability significantly. It implies that the BI capability can be reinforced in the case when senior managers are proactive in approving the BI initiatives, resource allocation, informing about the strategic importance of analytics, and promoting the evidence-based decision-making. In the case of Jordanian environment where strategic choices in most companies are highly influenced by top management, leadership support can be particularly relevant

towards justification of analytics-based practices and mitigating against change resistance. This observation coincides with the previous studies that highlighted that the top management support is paramount to the effective application and continued utilization of BI and similar digital systems (Almajali et al., 2016; Kongthanasuwan et al., 2023; Trincanato & Vagnoni, 2024). Nevertheless, the existing results go further than mere validation in demonstrating that the role of leadership support extends beyond implementation success, and it actually leads to the development of marketing-based BI capability per se.

Another significant result is that technology readiness affects BI capability positively. This means that the companies that have an improved digital infrastructure, system integration and scalable platforms are more able to produce timely and reliable marketing intelligence. Technology preparedness thus gives the operation base in which BI tools can operate using various data sources like CRM systems, online channels, and customer analytics services. This finding confirms earlier research that demonstrates that solid infrastructure is critical to support analytics, information integration, and responsiveness of an organization (Bao et al., 2023; Brewis et al., 2023; Qatawneh & Al-Okaily, 2024).

In the meantime, technology readiness impact was not as important in this paper as it was in the case of analytics maturity. This analogy is important because it implies that there is not enough infrastructure only; companies may possess enough systems and platforms yet may lack a good BI ability with analytical skills and organizational readiness. This way, the results validate the fact that technology is a necessity yet, not an adequate determinant of BI success.

The research also established that data-driven culture affects positively and significantly on BI capability. It implies that the companies whose staff members attach importance to evidence-based decision-making and regularly seek data and encourage critical thinking have higher chances of building more robust BI capacity in marketing. This effect, though, was statistically significant, but it was relatively small compared with the impacts of analytics maturity, leadership support,

and technology readiness. A potential explanation is that the process of cultural change is prone to evolve over time and might take more time before its effect will be felt. At the companies of the emerging markets, the data-driven values may not be fully developed, and cultural change may be lagging investment in systems and tools. However, the importance of this connection validates the fact that culture continues to be a necessary facilitator of BI ability. This result aligns with the previous literature that highlights the role of organizational culture in supporting the use of analytics and digital transformation (Hmoud et al., 2023; Ghafoori et al., 2024; Chaudhuri et al., 2024). The current research provides a more subtle transition by demonstrating that culture is important, yet its impact might be more indirect or take longer to be realized when compared to more instantaneous operational facilitators like analytics maturity and managerial commitment.

All these findings combine to provide a significant meaning of BI capability development within the marketing functional aspect. The findings indicate that companies do not develop BI capability merely because of buying BI software or updating digital infrastructure. Instead, BI capability is created through a techno-ready state plus management commitment, a techno-friendly data culture and above all, a well-developed analytics capability. This combined explanation explains why so many BI investments do not pay off in delivering strategic value: organizations tend to concentrate on technical purchase but poorly invest in the organizational situation that enables BI outputs to impact marketing decision-making. The paper, in that regard, supports the thesis that actual value creation is not in data possession, but in how the firm can make decisions institutionalized by analytics.

Theoretically speaking, this research is useful to the BI and digital transformation literature in the following aspects. Firstly, it addresses the discontinuity in the previous studies by examining the organizational, technological, managerial, and analytical enablers in a single integrated model as opposed to looking at them individually. Second, the results follow the rationale of the Resource-Based View in that both tangible, e.g. technology basis, and intangible, e.g. culture and leadership support,

work together in developing BI capability as a strategic organizational resource. Third, the findings are also aligned with the Dynamic Capabilities Theory, as it seems that the BI capability can be based on how the firm is able to integrate, reorganize, and deploy company resources in reaction to a shifting digital marketing landscape. Lastly, the study offers context-specific evidence of Jordan, which is still underrepresented in the BI research, and thus enhances the knowledge on BI capability building in emerging markets.

The implications to the manager are also crucial. To companies with interest in improving BI strength in marketing, the results imply that emphasis should be made on building analytics maturity approach via systematic analytical operations, training, trial and error, and performance appraisal regimes. It is also the responsibility of organizations to make sure that BI initiatives have the visible support by the top management in terms of funding, strategic alignment, and frequent use of analytics in the decision-making forums. Moreover, further investment in scalable and integrated digital infrastructure is still required, although this investment should be coupled with an attempt to develop a more general data-driven culture within the department. Managers are advised to therefore consider and treat the BI capability development as a cross-functional transformation program and not an individual IT project.

With these contributions, the study is limited in a few ways. First, the cross-sectional study cannot provide causal inferences, and future longitudinal research would provide more evidence on the development of BI capability. Secondly, common method bias may be high due to the use of self-reported survey data. The objective performance measures or the data on system-use could be introduced into the future research. Thirdly, the research is only based on direct effects. Future research can focus on mediating or modulating factors, including the quality of data governance, quality of decision, or organizational agility. Lastly, since companies across industries might not be equally digital and in their marketing activities, future studies may compare industries in order to establish whether the magnitude of such association differs across industries as retail, banking, manufacturing, or services.

## CONCLUSION

This study was meant to investigate the role played by organizational and technological conditions to support the development of Business Intelligence (BI) capability in marketing functions in a developing market environment. The empirical study proved that the role of analytics maturity, leadership support, technological readiness, and data-driven culture is significant, although the role of analytics maturity is the most influential. These findings suggest that BI proficiency in marketing is essentially an organizational capability, and not an entirely technological achievement. The adequate usage of BI involves the utilization of formal analytical routines, managerial commitment, and desirable organizational culture, which will enable conversion of data to marketable information. Companies that would wish to exploit most of the marketing intelligence should therefore initiate equal investments in analytics capacity, leadership engagement, and technological integrations rather than merely placing additional focus on system acquisitions. Subsequent research can encapsulate the existing research as an expression of longitudinal designs, which follow the development of BI capabilities over a specified period and involves objective performance measures to get rid of the reliance of perceptual data. Moreover, the future studies can focus on the mediating or moderating processes, industry-specific variables, and on the influence of the new technologies like artificial intelligence on the formation of BI potential.

## AUTHOR CONTRIBUTIONS

Conceptualization: Mohammad Mahmoud Saleem Alzubi.

Data curation: Mohammad Mahmoud Saleem Alzubi.

Formal analysis: Mohammad Mahmoud Saleem Alzubi.

Funding acquisition: Mohammad Mahmoud Saleem Alzubi.

Investigation: Mohammad Mahmoud Saleem Alzubi.

Methodology: Abdelaziz Saleh Mohammad.

Project administration: Mohammad Mahmoud Saleem Alzubi.

Resources: Mohammad Mahmoud Saleem Alzubi.

Software: Abdelaziz Saleh Mohammad.

Supervision: Abdelaziz Saleh Mohammad.

Validation: Abdelaziz Saleh Mohammad.

Visualization: Abdelaziz Saleh Mohammad.

Writing – original draft: Mohammad Mahmoud Saleem Alzubi.

Writing – review & editing: Mohammad Mahmoud Saleem Alzubi.

## REFERENCES

1. Abu-AlSondos, I. A. (2025). Eliminating data silos with business intelligence: The role of organizational culture and leadership in Jordan's insurance sector. *Insurance Markets and Companies*, 16(2), 24-37. [https://doi.org/10.21511/ins.16\(2\).2025.03](https://doi.org/10.21511/ins.16(2).2025.03)
2. Abubakar, A. M., Türkmen, A., Işık, V., Mikalef, P., & Turel, O. (2025). Exploring the complementary effects of business analytics capabilities and  $\pi$ -shaped skills on innovation outcomes. *European Journal of Information Systems*, 34(1), 146-163. <https://doi.org/10.1080/0960085X.2024.2304030>
3. Alhur, M., Abudoush, A. N., Alqirem, R., & Mostafa, M. M. (2025). Beyond theory: leveraging business intelligence tools to uncover actionable pathways for mapping the intention-behavior gap in behavioral sciences. *Human Behavior and Emerging Technologies*, 2025(1), 5224549. <https://doi.org/10.1155/hbe2/5224549>
4. Ali, A. A. A., Abualrejal, H. M. E., Mohamed Udin, Z. B., Shtawi, H. O., & Alqudah, A. Z. (2021). The role of supply chain integration on project management success in Jordanian engineering companies. In *Proceedings of International conference on emerging technologies and intelligent systems* (pp. 646-657). Cham: Springer International Publishing. [https://doi.org/10.1007/978-3-030-82616-1\\_53](https://doi.org/10.1007/978-3-030-82616-1_53)
5. Ali, A. A. A., Fayad, A. A., Alomair, A., & Al Naim, A. S. (2024). The role of digital supply chain on inventory management effectiveness within engineering companies in Jordan. *Sustainability*, 16(18), 8031. <https://doi.org/10.3390/su16188031>

6. Alkhwaldi, A. F. (2024). Understanding the acceptance of business intelligence from healthcare professionals' perspective: An empirical study of healthcare organizations. *International Journal of Organizational Analysis*. <https://doi.org/10.1108/IJOA-10-2023-4063>
7. AL-maaitah, T. A. (2025). *Determinants of business intelligence adoption in the public Jordanian Universities*. Discover Sustainability. <https://doi.org/10.1007/s43621-025-02327-x>
8. Almajali, D. A., Masa'deh, R., & Tarhini, A. (2016). Antecedents of ERP systems implementation success: a study on Jordanian health-care sector. *Journal of Enterprise Information Management*, 29(4), 549-565. <https://doi.org/10.1108/JEIM-03-2015-0024>
9. Alobaydi, B. A. A., Alzubi, M. M. S., & Alqudah, A. M. (2025). Advancing e-Commerce adoption among SMEs in Jordan: A path to digital transformation. *Heritage and Sustainable Development*, 7(1), 467-478. <https://doi.org/10.37868/hsd.v7i1.1192>
10. Alrifae, A. A. M. (2025). The role of technological enablers and government support in e-commerce adoption among SMEs in Jordan. *Problems and Perspectives in Management*, 23(2), 775-784. [https://doi.org/10.21511/ppm.23\(2\).2025.56](https://doi.org/10.21511/ppm.23(2).2025.56)
11. Alzubi, M. M. S. (2025). Business Intelligence adoption in Jordanian e-banking: Unveiling key drivers and challenges. *Banks and Bank Systems*, 20(2), 135-142. [https://doi.org/10.21511/bbs.20\(2\).2025.11](https://doi.org/10.21511/bbs.20(2).2025.11)
12. Alzubi, M. M. S. (2025). Adoption of business intelligence in Jordanian hospitals: Examining moderating effects of support, readiness, compatibility, and user satisfaction. *Problems and Perspectives in Management*, 23(2), 838. [https://doi.org/10.21511/ppm.23\(2\).2025.61](https://doi.org/10.21511/ppm.23(2).2025.61)
13. Atieh Ali, A. A., Mohamed Udin, Z., & Abualrejal, H. M. E. (2023). The Impact of Humanitarian Supply Chain on Non-Government Organizations Performance Moderated by Organisation Culture. *International Journal of Sustainable Development and Planning*, 18(3), 763-772. <https://doi.org/10.18280/ijstdp.180312>
14. Bao, Z., Hashim, K. F., Almagrabi, A. O., & binti Hashim, H. (2023). Business intelligence impact on management accounting development given the role of mediation decision type and environment. *Information Processing & Management*, 60(4), 103380. <https://doi.org/10.1016/j.ipm.2023.103380>
15. Brewis, C., Dibb, S., & Meadows, M. (2023). Leveraging big data for strategic marketing: A dynamic capabilities model for incumbent firms. *Technological Forecasting and Social Change*, 190, 122402. <https://doi.org/10.1016/j.techfore.2023.122402>
16. Cadden, T., Weerawardena, J., Cao, G., Duan, Y., & McIvor, R. (2023). Examining the role of big data and marketing analytics in SMEs innovation and competitive advantage: A knowledge integration perspective. *Journal of Business Research*, 168, 114225. <https://doi.org/10.1016/j.jbusres.2023.114225>
17. Caiado, R. G. G., Scavarda, L. F., Vidal, G., de Mattos Nascimento, D. L., & Garza-Reyes, J. A. (2025). A taxonomy of critical factors towards sustainable operations and supply chain management 4.0 in developing countries. *Operations Management Research*, 18(2), 744-767. <https://doi.org/10.1007/s12063-023-00430-8>
18. Cardoso, E., & Su, X. (2022). Designing a business intelligence and analytics maturity model for higher education: A design science approach. *Applied Sciences*, 12(9), 4625. <https://doi.org/10.3390/app12094625>
19. Chaudhuri, R., Chatterjee, S., Vrontis, D., & Thrassou, A. (2024). Adoption of robust business analytics for product innovation and organizational performance: the mediating role of organizational data-driven culture. *Annals of Operations Research*, 339(3), 1757-1791. <https://doi.org/10.1007/s10479-021-04407-3>
20. Chen, Z., Zhao, J., & Jin, C. (2025). RETRACTED: Business intelligence for Industry 4.0: predictive models for retail and distribution. *International Journal of Retail & Distribution Management*, 53(3), 1-16. <https://doi.org/10.1108/IJRDM-02-2023-0101>
21. Chongwatpol, J. (2025). A technological, data-oriented design journey for teaching and learning business intelligence and analytics projects. *Decision Sciences Journal of Innovative Education*, 23(3), e70007. <https://doi.org/10.1111/dsji.70007>
22. Exner, R., & Zunic, A. (2025). Architecture Foundation of BI Strategy. In *The Path to an Intelligent Enterprise: The Art and Practice of Business Intelligence Strategy* (pp. 189-237). Cham: Springer Nature Switzerland. [https://doi.org/10.1007/978-3-031-69914-6\\_6](https://doi.org/10.1007/978-3-031-69914-6_6)
23. Hair, F. Jr., J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, 26(2), 106-121. <https://doi.org/10.1108/EBR-10-2013-0128>
24. Figueiredo, N., Ferreira, B. M., Abrantes, J. L., & Martinez, L. F. (2025). The Role of Digital Marketing in Online Shopping: A Bibliometric Analysis for Decoding Consumer Behavior. *Journal of Theoretical and Applied Electronic Commerce Research*, 20(1), 25. <https://doi.org/10.3390/jtaer20010025>
25. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.1177/002224378101800104>
26. Ghafoori, A., Gupta, M., Merhi, M. I., Gupta, S., & Shore, A. P. (2024). Toward the role of organizational culture in data-driven digital transformation. *International Journal of Production Economics*, 271, 109205. <https://doi.org/10.1016/j.ijpe.2024.109205>

27. Golestanizadeh, M., Sarvari, H., Cristofaro, M., & Chan, D. W. M. (2023). Effect of applying business intelligence on export development and brand internationalization in large industrial firms. *Administrative Sciences*, 13(2), 27. <https://doi.org/10.3390/admsci13020027>
28. Gordon, I., & Thompson, N. (2024). Data and Organisational Culture. In *Data and the Built Environment: A Practical Guide to Building a Better World Using Data* (pp. 141-197). Cham: Springer Nature Switzerland. [https://doi.org/10.1007/978-3-031-51008-3\\_4](https://doi.org/10.1007/978-3-031-51008-3_4)
29. Hasan, A. A., Kumar, A., & Riaz, Z. (2026). The impact of business intelligence adoption on ambidextrous innovation in the UAE healthcare sector: a serial mediation model. *International Journal of Islamic and Middle Eastern Finance and Management*, 19(1), 163-184. <https://doi.org/10.1108/IMEFM-04-2025-0253>
30. Hmoud, H., Al-Adwan, A. S., Horani, O., Yaseen, H., & Al Zoubi, J. Z. (2023). Factors influencing business intelligence adoption by higher education institutions. *Journal of Open Innovation: Technology, Market, and Complexity*, 9(3), 100111. <https://doi.org/10.1016/j.joitmc.2023.100111>
31. Ibrahim, I., Ali, K., Alzoubi, I. A., Alzubi, M. M., AL-Tahitah, A., & Kadhim, K. G. (2021). Impact of employee's engagement and task identity on employee's retention strategy mediated by job satisfaction. In *Proceedings of International Conference on Business and Technology* (pp. 559-573). [https://doi.org/10.1007/978-3-031-08084-5\\_40](https://doi.org/10.1007/978-3-031-08084-5_40)
32. Kazemi, F., & Soltani, F. (2024). The energy industry's response to competitive intelligence in green marketing (case study of Qatar). *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1), 100192. <https://doi.org/10.1016/j.joitmc.2023.100192>
33. Kongthanasuwan, T., Sriwiboon, N., Horbanluekit, B., Laesanklang, W., & Krityakierne, T. (2023). Market analysis with business intelligence system for marketing planning. *Information*, 14(2), 116. <https://doi.org/10.3390/info14020116>
34. Kyaw, K. S., Tepsongkroh, P., Thongkamkaew, C., & Sasha, F. (2023). Business intelligent framework using sentiment analysis for smart digital marketing in the E-commerce era. *Asia Social Issues*, 16(3), e252965-e252965. <https://doi.org/10.48048/asi.2023.252965>
35. Leung, X. Y., O'Connor, P., Parra-Lopez, E., & Wei-Han Tan, G. (2025). Guest editorial: Reshaping future tourism through innovation. *Tourism Review*, 80(3), 625-630. <https://doi.org/10.1108/TR-04-2025-954>
36. Lismont, J., Vanthienen, J., Baensens, B., & Lemahieu, W. (2017). Defining analytics maturity indicators: A survey approach. *International Journal of Information Management*, 37(3), 114-124. <https://doi.org/10.1016/j.ijinfomgt.2016.12.003>
37. Marei, A. (2023). The moderating role of big data and user satisfaction in the predictors of generalized audit software among Jordanian auditing firms. *expert systems*, 20, 1-11. <https://doi.org/10.37394/23207.2023.20.121>
38. Mahmoud, M. M. H. (2026). Mitigating employee turnover in the Jordanian private universities. *Human Systems Management*, 45(1), 66-75. <https://doi.org/10.1177/01672533251355888>
39. Mahmoud, M. M. H., Ali, A. A., Alrifae, A. A., Eitah, R. A., & AlZubi, M. M. (2025). The impact of digital HRM system and digital transformation on HR efficiency with organizational agility as a moderator. *Discover Sustainability*, 6(1), 1038. <https://doi.org/10.1007/s43621-025-01713-9>
40. Martins, A., Bianchi de Aguiar, M. T., Sambento, M., & Branco, M. C. (2025). Business intelligence system adoption and the leveraging of reporting process capabilities. *Journal of Accounting & Organizational Change*, 21(3), 506-534. <https://doi.org/10.1108/JAOC-11-2023-0204>
41. Mohammed, A. B., Al-Okaily, M., Qasim, D., & Al-Majali, M. K. (2024). Towards an understanding of business intelligence and analytics usage: Evidence from the banking industry. *International Journal of Information Management Data Insights*, 4(1), 100215. <https://doi.org/10.1016/j.jjimei.2024.100215>
42. Nasiri, M., Ukko, J., Saunila, M., Rantala, T., & Rantanen, H. (2020). Digital-related capabilities and financial performance: the mediating effect of performance measurement systems. *Technology Analysis & Strategic Management*, 32(12), 1393-1406. <https://doi.org/10.1080/09537325.2020.1772966>
43. Nunnally, J. C. (1978). An overview of psychological measurement. In *Clinical Diagnosis of Mental Disorders: A Handbook* (pp. 97-146). [https://doi.org/10.1007/978-1-4684-2490-4\\_4](https://doi.org/10.1007/978-1-4684-2490-4_4)
44. Obaid, T., Eneizan, B., Abumandil, M. S., Mahmoud, A. Y., Abu-Naser, S. S., & Ali, A. A. A. (2022). Factors affecting students' adoption of e-learning systems during COVID-19 pandemic: A structural equation modeling approach. In *Proceedings of International conference on information systems and intelligent applications* (pp. 227-242). Cham: Springer International Publishing. [https://doi.org/10.1007/978-3-031-16865-9\\_19](https://doi.org/10.1007/978-3-031-16865-9_19)
45. Olaniyi, O. O., Abalaka, A., & Olabanji, S. O. (2023). Utilizing big data analytics and business intelligence for improved decision-making at leading fortune company. *Journal of Scientific Research and Reports*, 29(9), 64-72. <https://doi.org/10.9734/jsrr/2023/v29i91785>
46. Pour, M. J., Abbasi, F., & Sohrabi, B. (2023). Toward a maturity model for big data analytics: A roadmap for complex data processing. *International Journal of Information Technology & Decision Making*, 22(01), 377-419. <https://doi.org/10.1142/S0219622022500390>
47. Qatawneh, A. M., & Al-Okaily, M. (2024). The mediating role of technological vigilance between

- IT infrastructure and AIS efficiency. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1), 100212. <https://doi.org/10.1016/j.joitmc.2024.100212>
48. Ragazou, K., Passas, I., Garefalakis, A., & Zopounidis, C. (2023). Business intelligence model empowering SMEs to make better decisions and enhance their competitive advantage. *Discover Analytics*, 1(1), 2. <https://doi.org/10.1007/s44257-022-00002-3>
  49. Ramalingam, S., Subramanian, M., Reddy, A. S., Tarakaramu, N., Khan, M. I., Abdullaev, S., & Dhahbi, S. (2024). Exploring business intelligence applications in the healthcare industry: A comprehensive analysis. *Egyptian Informatics Journal*, 25, 100438. <https://doi.org/10.1016/j.eij.2024.100438>
  50. Raman, R., Pattnaik, D., Hughes, L., & Nedungadi, P. (2024). Unveiling the dynamics of AI applications: A review of reviews using scientometrics and BERTopic modeling. *Journal of Innovation & Knowledge*, 9(3), 100517. <https://doi.org/10.1016/j.jik.2024.100517>
  51. Rigamonti, E., Gastaldi, L., & Corso, M. (2024). Measuring HR analytics maturity: supporting the development of a roadmap for data-driven human resources management. *Management Decision*, 62(13), 243-282. <https://doi.org/10.1108/MD-11-2023-2087>
  52. Sharabati, A.-A. A., Ali, A. A. A., Allahham, M. I., Hussein, A. A., Alheet, A. F., & Mohammad, A. S. (2024). The Impact of Digital Marketing on the Performance of SMEs: An Analytical Study in Light of Modern Digital Transformations. *Sustainability*, 16(19), 8667. <https://doi.org/10.3390/su16198667>
  53. Shiau, W.-L., Chen, H., Wang, Z., & Dwivedi, Y. K. (2023). Exploring core knowledge in business intelligence research. *Internet Research*, 33(3), 1179-1201. <https://doi.org/10.1108/INTR-04-2021-0231>
  54. Syalevi, R., Raharjo, T., & Wibowo, W. S. (2024). The impact of Project Management Offices on organizational performance: a comprehensive review of the literature. *International Journal of Information Systems and Project Management*, 12(3), 5. <https://doi.org/10.12821/ijispm120304>
  55. Tabachnick, B. G., & Fidell, L. S. (2007). *Experimental designs using ANOVA* (Vol. 724). Thomson/Brooks/Cole Belmont, CA.
  56. Touijer, M. N., & Elabjani, A. (2025). A Delphi study on digital maturity and digital competitiveness in the context of digital transformation. *Journal of Enterprising Communities: People and Places in the Global Economy*, 19(2), 386-409. <https://doi.org/10.1108/JEC-05-2024-0088>
  57. Trincanato, E., & Vagnoni, E. (2024). Business intelligence and the leverage of information in healthcare organizations from a managerial perspective: a systematic literature review and research agenda. *Journal of Health Organization and Management*. <https://doi.org/10.1108/JHOM-02-2023-0039>
  58. Wang, M., Ren, S., & Xie, G. (2024). Going "green trade": Assessing the impact of digital technology application on green product export. *Technology in Society*, 77, 102487. <https://doi.org/10.1016/j.techsoc.2024.102487>
  59. Yiu, L. M. D., Yeung, A. C. L., & Jong, A. P. L. (2020). Business intelligence systems and operational capability: an empirical analysis of high-tech sectors. *Industrial Management & Data Systems*, 120(6), 1195-1215. <https://doi.org/10.1108/IMDS-12-2019-0659>