Assessing the Impact of Business Intelligence and its Impact on the Performance of Industrial Sector

Muhammad Umair[1]*, Samira Simmou[2]

[1]Robinson College of Business, Georgia State University, USA; umair.acc51@gmail.com

[2] Polydisciplinary Faculty of Taroudant, Ibn Zohr University, Taroudant, Morocco; samira.simmou@edu.uiz.ac.ma

*Corresponding Author: umair.acc51@gmail.com

DOI: https://doi.org/10.30212/JITI.202503.003

Submitted: Dec. 03, 2024 Accepted: Feb. 16, 2025

ABSTRACT

This paper asserts that companies must have quick and efficient access to business information to survive and grow in today's fast-changing business environment. "Business intelligence" (BI) is a management concept and tool that enables businesses to increase their knowledge and make better business decisions. The research sample includes 70 industrial businesses listed on the Amman Stock Exchange between 2010 and 2021. This article explores the quantification of tacit economic knowledge for business intelligence in industrial companies and its application in analyzing learning, growth, performance, and customer and financial impacts. Each variable analyses a different business intelligence component. Businesses utilize Business Intelligence (BI) to enhance their decision-making and service-delivery processes. We prioritize efficiency, business intelligence coverage, and user satisfaction. Business intelligence (BI) analyzes internal and external data to identify markets and companies. Business intelligence (BI) helps you comprehend your company's activities. Therefore, BI management is likely interested in understanding the organization's performance. The research shows that all businesses need business intelligence support. Business intelligence (BI) influences decision-making more than learning, growth, and financing, but customer variables less so. The findings show that intellectual capital measures the knowledge economy and affects performance.

Keywords: Business intelligence, Amman Stock Exchange, Financial impacts, Artificial intelligence,

1. Introduction

Business intelligence is crucial for modern organizations to facilitate informed decision-making. Business users widely utilise business intelligence (BI) solutions, whether developed as self-service applications or centralised dashboards by IT and BI teams. Artificial intelligence fundamentally alters the relationship between decision-makers and the corporate data managed by business intelligence systems. A common misunderstanding about artificial intelligence (AI) is that it denotes machines with human-like cognitive capabilities. The enhanced accessibility of extensive

data and computational resources has enabled artificial intelligence to identify various commercial applications, especially those related to human emotions. The capabilities an organisation requires to leverage AI to achieve its objectives are a common theme in various commercial interpretations of artificial intelligence (AI). AI employs machine learning and natural language processing (NLP) to improve a company's operations and decision-making based on data [1]. The artificial intelligence business saw a valuation of over $184 billion in 2024, an increase of about $50 billion from the previous year. Experts predict that by 2030, the sector will have grown dramatically, topping $826 billion [2]. Prominent businesses in the IT sector are striving for the title of AI industry leader. Notable consulting organizations like PwC, Boston Consulting Group, and MIT Sloan Management Review have conducted research revealing an increasing inclination among enterprises to employ AI technologies.

Twenty-five per cent of the participants have used AI in their operations; another twenty-five per cent are implementing AI pilot programs, and one-third intend to adopt such technologies shortly [3]. Research indicates that artificial intelligence is transforming various commercial practices. This encompasses marketing, retail, supply chain management, autonomous vehicles, virtual assistance services, augmented and virtual reality retail, personalized medical treatments, and additional applications. Artificial intelligence (AI) offers various business applications and advantages, with some augmenting business intelligence (BI) and others serving as competitors. This research analyzes the potential benefits of integrating AI and BI and the expected transformations as this trend progresses. By integrating and analysing real-time and historical data, business intelligence technologies, such as interactive reports and BI dashboards, have enhanced comprehension of corporate operations. This is known as descriptive analytics. This document presents an overview of the company's current and historical conditions. Many commercial clients maintain elevated standards for their data. Their objective is to identify data analysis tools capable of predicting future events and offering strategic recommendations to management. This approach is typically known as prescriptive analytics [4].

These systems were historically intricate to design and often challenging to comprehend and deploy, hindering their effective implementation. Natural language processing (NLP) in AI enhances analytical capabilities and user interfaces, facilitating the transition from descriptive to predictive and, ultimately, prescriptive insights. The ability to predict trends enables organizations to implement protective measures. Additionally, decision-makers obtain up-to-date knowledge through real-time data analysis enabled by AI-driven business intelligence solutions. Integrating AI and BI can facilitate the automation of business operations, especially for straightforward or repetitive tasks [5]. This strategy enables firms to increase productivity and decrease physical labour. Companies must participate in the knowledge economy to boost national and business competitiveness.

Recently, there has been controversy regarding the nomenclature used to describe business intelligence. Business intelligence (BI) encompasses diverse concepts, including competitive intelligence, market intelligence, customer intelligence, competitor intelligence, and strategic information. Corporate and academic contexts interchangeably use these terms. The phrase has been

defined from multiple perspectives [6], yet the concept of data and information analysis is consistently significant across nearly all definitions. Business intelligence (BI) seeks to convert large volumes of organisational data into actionable insights for managers, thereby enhancing data flow and accumulation.

The initiative to formalize intelligence operations represents a significant transformation. Consequently, it is logical to conclude that all businesses employ business intelligence to varying degrees. Understanding business intelligence (BI) requires a thorough understanding of essential elements. Utilizing business intelligence enables a comprehensive understanding of the organization's capabilities, current and emerging market trends, technological developments, regulatory environments, and competitors' actions and outcomes [7].

Business intelligence solutions provide strategists and decision-makers with accurate information regarding their organizations and competitors. The objective is to enhance the timing and quality of contributions to decision-making processes. Business intelligence denotes a distinct category of knowledge. The application of knowledge management methodologies for the generation and dissemination of knowledge is advantageous. Unrestricted data flow acquires some information, while purchases, such as scanner data in the food industry, obtain other information. Distributing intelligence data to a varied workforce is critical to knowledge transfer. Sales personnel should possess knowledge of market trends, competitive offerings, and essential differentiators [8]. Business intelligence (BI) represents the latest development in enterprise decision-support systems. To determine which customers to prioritize for future marketing and sales initiatives, an owner-manager may seek to ascertain the profitability and income generated per client.

Numerous prior decision-support tools have transitioned into business intelligence. These changes, the data warehouse becoming a repository, better data cleaning leading to a single truth, better software and hardware features, and the widespread use of Internet technologies making user interfaces available everywhere have all made the business intelligence environment a lot better. All organizational decision-makers use business intelligence. It influences significant managerial decisions, encompassing both strategic and operational aspects. It assists lower-level managers in performing routine tasks. Specific organisations provide business intelligence, often called "BI for the masses," as an advantage to a significant portion of their workforce [9].

With the rise of the "knowledge economy," there has been a greater emphasis on how companies manage their intellectual capital (IC), which includes intangible knowledge assets. Academic and professional communities usually feel that effective intellectual capital management yields a major long-term competitive advantage. Organizations have made significant investments in intellectual capital (IC) evaluations, IC management systems, and, to a lesser extent, assessment of IC performance outcomes [10, 11]. The application of IC is a critical aspect of knowledge management. The bulk of business intelligence solutions offer a wide range of functions. The World Wide Web enables the generation and dissemination of new knowledge. In contrast, business intelligence focuses mainly on analytical software. This program enhances the capabilities of its predecessors and is designed for decision support and executive information systems.

The Jordanian economy has undergone substantial transformation in recent years. Despite a robust economy, sufficient funding, and a reliable power supply, businesses encounter unexpected challenges. Expanding enterprises face numerous challenges, including reduced budgets, constrained financial resources, and an increasingly complex technological environment. The business environment is characterized by dynamism and uncertainty; therefore, organizations must exhibit agility and prompt responses. Leveraging current knowledge about the organization, its operations, and its business partners can help you make decisions that create or maintain a competitive advantage in the marketplace. Technology that promotes organisational decision-making is essential to disseminating information inside the business and improving performance and competitiveness [12]. In today's economic situation, companies cannot afford to incur financial losses due to poor decisions; thus, it is critical to emphasize the importance of making sound decisions.

Recent research indicates that, despite significant advancements in the adoption of business intelligence tools, the primary hurdles continue to be administrative and conceptual [13]. Despite claims of embracing business intelligence, many industrial organizations continue to prioritize data mining integration over addressing management challenges, such as sustainability [14]. Although there is potential for developing business information from technological and managerial perspectives, combining socio-environmental data with financial data to obtain balanced results is unusual [15]. Challenges mostly stemmed from company executives' perspectives and application of business intelligence, which enables data analytics and encourages responsible, sustainable development [16]. Wamba [17] stresses the importance of conducting more organizational-level research to identify the effects of business intelligence on firm sustainability performances. According to [1], ISO 14001-certified manufacturers have implemented effective environmental management systems in accordance with ISO requirements. Inadequate use of business analytics to find low-cost, high-reward changes does not ensure complete compliance with socially responsible and ecologically sustainable corporate strategies [18]. Despite ISO 14001 certification, many businesses struggle to continuously implement modern technologies provided by business intelligence services for online client transactions [19, 20].

The limited impact of Internet channels on sales for Jordanian manufacturers indicates that these enterprises have yet to realize their capabilities thoroughly. The aim was to analyze the current state of business intelligence among Jordanian enterprises, explicitly focusing on the application of BI in their operational processes. The research sought to elucidate how enterprises leverage information, articulate the concept of business intelligence (BI) within a corporate framework, and investigate the factors contributing to its lack of implementation. The study attempted to define its implications and propose recommendations for subsequent research endeavours.

2. Literature Review

The foundation of corporate intelligence is shared understanding. In literature, the term "sense-making" refers to a number of acknowledged interpretations. Individuals endeavour to make sense of events as they unfold. We must explore contextual factors and amplify delicate signals to interpret

finer details [21]. As a strategy that promotes innovation and cooperation, it can help the company navigate challenges and identify opportunities [22-24]. Subjective measurements are valuable because they reveal consumers' positive opinions of intelligent items. Nonetheless, the impact of BI defies assessment by subjective evaluations. Davenport, Guha [25] suggested that the revolutionary technique of Anticipative Strategic Environmental Scanning-Collaborative Intelligence, or VAS-IC, emerged, emphasizing the importance of business decision-making. The organizations in the survey listed the number of strategic agreements in which the CI team was involved and compared their results to consultant costs and win-loss ratios for transactions in which they had no role. Agostini and Nosella [16] held that smaller companies typically allocate fewer resources to size-adjusted commodities, primarily predicted to yield long-term returns, compared to their larger counterparts. Given new technologies' potential for growth, small and medium-sized businesses take a cautious approach to adoption. SMEs' distinctive qualities considerably impact their ICT adoption behaviour, with limited financial and other resources being the most important determinant. This viewpoint is supported by the following considerations: As stated by [21], a considerable number of developing economies worldwide believe that MSMEs will continue to play an important role in promoting economic growth and development in the foreseeable future.

Albury's [26] research in the United States found specific barriers to creativity in the public sector, and the proposed BI framework, aimed at improving cognition and action, effectively supported innovation in this arena. Ifinedo [13] empirical research on US firms revealed that the BI framework successfully pinpointed obstacles to innovation in the public sector and offered a strategic approach to overcome these challenges. A German study by Henning et al. (2008) discovered that RFID and electronic product identifiers allow for faster data capture with higher granularity, improving the quality of business intelligence analysis. [27] argued that using business intelligence in the banking sector effectively mitigated traditional banks' challenges in improving customer service, managing financial risks, optimizing operational performance, and ensuring long-term profit growth. Dehning, Richardson [28] concludes that effective implementation of business intelligence (BI) necessitates that managers define and adhere to a pathway beginning with data and ending with the ultimate recipients of information at the senior levels of the organizational hierarchy. Ifinedo [13] empirical research on Canadian SMEs reveals a lack of understanding about the compatibility of IEBT and related technologies among these organizations.

Stone Aravopoulou [29] explain the integration of business intelligence (BI) tools with artificial intelligence (AI), decision trees, natural language processing (NLP), and social media (SM) technology in their review. Business intelligence systems are very specialized and sophisticated. In the same year, [30] studied three South African companies and discovered that the Technology, Company, and Environment frameworks capture the diffusion factors impacting the prevalence of ubiquitous business intelligence inside these organizations. The key element determining the prevalence of business intelligence in these firms appears to be organizational climate. Several business intelligence studies using diverse techniques surfaced. In an empirical research study of 210 employees from African SMEs, [31] discovered no relationship between employee maturity levels

and BI system project life cycle stages. According to a recent assessment of key maturity levels, Moroccan SMEs should embark on a fresh initiative to upgrade their business intelligence systems. The findings of [32] suggested that business information significantly impacts integration, efficiency, effectiveness, agility, and flexibility, increasing strategic decision-making.

[27] discovered that several organizational factors influence the use of business intelligence analytics (BIA) for data-driven decision-making, including the organization's critical mass, industry experience, the establishment of industry standards, and the size or data-related infrastructure of the organization. [33] stated that the goal of developing Cloud BI was to improve the effectiveness and efficiency of business intelligence by augmenting BI software functionality. It speeds up the implementation of business intelligence solutions while cutting costs connected with BI systems. According to [34], internal company features are the primary factors impacting the Adoption of BIS. Their exploratory study on SMEs found that the organizational context emerged as the most important element promoting BIS adoption in these businesses, with management support ranking top. [21] conducted a comprehensive assessment in India, outlining the security and privacy regulations applied within the BI environment during installation. Wachter and Howell [18]conducted an empirical study of hospitals and found that government regulations significantly facilitated technological advancement, assisted RFID solution providers in overcoming IT challenges, and increased hospitals' willingness to adopt such innovations.

After reviewing a study in [35], it was concluded that adapting the BI system to match the demands of managers is the most important aspect in attaining successful BI adoption. The adoption process, which emphasizes precise requirement engineering, is the most critical part of the business intelligence life cycle. Sleep and Hulland's [15] research article reveals that BI&A substantially impacts the data used in several technical developments. It appears to be a significant investment to judge its real and abstract benefits. Enhancing the current organizational applications, procedures, and processes significantly impacts all enterprises. A relevant review research study conducted by [36] reveals that business intelligence applications have sparked significant attention as a potential solution to issues related to real-time decision-making settings and dynamic business processes. Organizational decisions can aid in implementing business intelligence (BI) applications, but individual factors like technology, motivation, social influence, and situational constraints ultimately determine the effectiveness of these applications in the company's business processes. [37] conducted a similar evaluation research study in the United States that year, demonstrating that the Data, Information, and Knowledge model effectively implements the modern business intelligence system. [15], Paschen Kietzmann [38] conducted an empirical study examining marketing company professionals and found that implementing business intelligence systems presents significant obstacles, requires substantial resources, and incurs significant expenditures. Organizations with a well-established strategy, a strong business justification, and support from senior management and business stakeholders were more likely to succeed in establishing cross-functional, business-oriented BI systems. According to the study by [22], although statistical methods achieve a noteworthy accuracy of 88.2%, hybridized computing methods outperform the former by an outstanding 94.1%.

The cited papers demonstrate that many BI investigations lacked an empirical basis. The core demographics of the study included small and medium-sized businesses, information technology corporations, and educational institutions. Organizations can benefit considerably from implementing business intelligence (BI), particularly in decision-making assistance, if they develop a clear strategy, a strong operational structure, devoted management, and the support of a sponsor [21]. Sufficient resource supply enables banks to operate with exceptional efficiency and a clear strategic vision. Researchers have extensively researched the impact of business intelligence (BI) on decision-making [39].

The empirical study falls short of clarifying CRM's critical role in promoting the system's seamless and effective operation. According to Bezuidenhout Heffernan [40], generalized job satisfaction, affective commitment, and organizational citizenship behaviour mediated the relationship between internal marketing and customer loyalty. The study found that worldwide marketing effectively encourages positive consumer behaviours, such as brand loyalty. Furthermore, [22] discovered that implementing CRM strategies and tools significantly increased these banks' profitability by evaluating financial and non-financial performance criteria. Chatterjee, and Chaudhuri [22] noted that the presence of trust and the act of sharing information significantly impacted a firm's performance in the realm of information sharing, which subsequently shaped the firm's interpretation and access to data. Customer relationship management has evolved as a key criterion of corporate success in various fields, including marketing, healthcare, and education. The firm has gained a competitive advantage in recent years by implementing CRM, which integrates seamlessly with its IT infrastructure, improves service quality, and boosts overall organizational performance.

This suggests that using BI in the industrial sector will greatly improve the operational efficiency of banking institutions. While multiple studies have identified business intelligence (BI) as a decision-making tool, the impact of BI on industrial sector performance remains unknown. Furthermore, given the scarcity of empirical studies investigating this combination, it is critical to develop a better conceptual framework to understand BI's impact on bank performance. The adoption of business intelligence is an essential indicator of its performance, and it is worth noting. The body of research on the human side effects of business intelligence adoption (BIA) is sparse, with a noteworthy lack of studies focusing specifically on India. Thus, analyzing business intelligence adoption rates as a crucial metric of its impact on industrial sector performance is a beneficial strategy, especially in emerging countries like Jordan.

2.1 Research Hypothesis

According to literature reviews, small businesses must strategically meet their information needs to succeed in today's competitive business world. The main idea behind a preliminary inquiry is as follows:

Hypothesis 1: The intelligence sector has little influence on the success of industrial firms.

Hypothesis 2: The learning and growth variable does not substantially impact industrial business success.

Hypothesis 3: Financial variables have limited influence on the success of industrial activity.

Hypothesis 4: Customer considerations have no substantial impact on the success of industrial firms.

Hypothesis 5: The knowledge economy variable influences industrial businesses' performance little.

3. Research Design

3.1 Research Data

The research sample consists of 70 companies classified under the category of industrial sector at Amman Stock Exchange. The financial data for the stated companies was extracted from their published financial statements from 2010 to 2021. The data was extracted from different sources, including Google Finance, Yahoo Finance and Bloomberg database. The breakup of the industrial sector as per the "Amman Stock Exchange" is provided in Table 1 below.

Table 1. Breakup of the industrial sector as per classification of "Amman Stock Exchange"

Type of Companies Included in the Industrial Sector	Number of Companies
Pharmaceutical and medicine companies	6
Chemical industry	10
Paper and cardboard companies	3
Printing and packaging	2
Food and beverages	11
Tobacco and Cigarettes	16
Engineering & construction	9
Electric industries	5
Textile, leather & Clothing	6
Glass and Ceramic industry	2
Total	70
Source: https://www.ase.com.jo/en	

3.2 Research model

Pedagogy and education are advancing and improving. You can calculate the administrative costs per customer by dividing the total administrative expenditures by the number of customers. Every intellectual labourer is committed to fostering continued innovation. Instructing others and distributing acquired knowledge are key components of any intellectual pursuit requiring constant learning. We refer to the financial metric as return on investment (ROI). We use the number of complaints (CusComp) as a statistic to assess the customer variable. Advancements and advances in education One way to determine this variable is to divide administrative expenditures by client count. Intellectual labourers are responsible for promoting continued innovation. Direction and Education: Engaging in intellectual activities necessitates a commitment to ongoing self-education and knowledge exchange. Economists define a labour market imbalance as when the labour supply

exceeds the demand for their services or when the output of goods and services exceeds consumer demand. As a result, a large number of people lose their jobs. Individuals of working age may face unemployment for two reasons: first, they may lose their jobs before reaching the legal working age, and second, they may get job offers after reaching that age.

The rise of the knowledge economy has focused on how companies manage their intellectual capital (IC), including tangible and intangible information assets. We calculate intangible capital by subtracting market value from book value. A "knowledge worker" works in the post-industrial era's learning society, new economy, information economy, or networked economy. Peter F. Drucker pioneered the concept of highly skilled intellectual labour, paving the way for contemporary knowledge workers. The return on equity (ROE) is a performance metric that evaluates the dependent variable. For instance, examine the subsequent research model.

$$ROE = \alpha + \beta_1 ROI + \beta_2 CusComp + \beta_3 \frac{\text{Admin Cost}}{\text{Customers}} + \beta_4 (\text{MrkVl} - \text{BkVl}) + \epsilon_{it} \quad \text{-----(1)}$$

4. Results and Discussion

4.1 Correlation Analysis:

One may employ a correlation coefficient to ascertain the linear relationship among four variables-a unique connection or association. The coefficient allows us to quantify the linear relationship between two variables. Table 2 displays the results of the correlation analysis.

Table 2. Results of Correlation Analysis

Independent Variables	ROI	CusComp	Admin cost/Customers	MrkVl - BkVl
Person Correlation	0.50**	0.199	0.315*	0.561***
Significance 2 Tailed	0.039	0.09	0.071	0.001
***, ** and * indicates significance at 99 %, 95% and 90% respectively.				

Source: Author

This study identified a substantial correlation ($p < 0.01$) between organizational success and the effective cultivation of intellectual capital. A statistically significant and positive correlation was observed between return on investment and firm performance at the 0.05 (2-tailed) level and between administrative expense per client and company performance at the 0.10 level. CusComp and commercial success are ultimately unrelated. The study indicated that intellectual capital exhibited the strongest correlations with company success relative to other attributes.

4.2 Regression Analysis

We performed a multiple regression analysis using the four variables of the business intelligence process to support hypothesis 1, which looked at the factors that influence corporate performance. We chose regression because it offered the most explicit representation of the independent variables.

Table 3. Results of multiple regression analysis

Variables	**Constant**	**ROI**	**CusComp**	**Admin cost/Customers**	**MrkVl - BkVl**

ROE	2.996	2.803	3.122	3.236	6.236
	0.049**	0.056**	0.222	0.059*	0.0089***
β		0.41	0.26	0.29	0.56
VIF	1.096	1.561	1.896	1.566	1.235
Model (1)					
R	0.561				
R2	0.314				
D-Watson	6.129				
F-Statistic	16.238				
Prob(F)	0 .030				
***, ** and * indicates significance at 99 %, 95% and 90% respectively.					

Source: Author

The business intelligence factor described the four independent variables. The beta coefficients indicated the alphabetical arrangement of the significant components remaining in the regression equation. This study used a variety of methodologies to evaluate its business intelligence performance. We use measurement to showcase the benefits of Business Intelligence and enhance its operational efficiency. We construct performance measures by conducting a literature review. The methodology section describes how the selected BI measurement emphasis areas affect the four measurement domains: financial, learning and growth, customer, and knowledge economy variables.

Recognizing the individuals and system actions involved makes it easier to evaluate BI performance. We can measure these endeavours using a variety of temporal, qualitative, and quantitative indicators. Quantitative measurement uses input and output indicators. Contentment among information consumers is a qualitative metric that necessitates a methodical data collection strategy for accurate assessment. There are two basic obstacles in determining the value of business intelligence. Using the BI process's knowledge and information is critical before results materialize. Improved decision-making abilities are one example of an intangible consequence that could result from these changes. These intangibles are difficult to value in monetary terms. The intangible consequences may result in large expenses over time. However, distinguishing between the specific benefits of BI and the outcomes of traditional decision-making can be difficult. As a result, the second key challenge in measuring the effects of business intelligence is determining which aspects of a phenomenon, such as market share growth, can be attributed to BI's new insights and which are caused by other factors. Table 3 shows the results of the regression analysis. We created the regression model by analyzing the multiple correlation coefficient (R), coefficient of determination (R^2), and F statistic.

An R-value of 0.50 suggests a strong positive correlation between the four characteristics and the dependent variable, firm performance (ROE). The four variables together explained approximately 31% of the variance in performance ($R^2 = 0.314$). An F ratio of 16.238 ($p = 0.030$) was considered significant, indicating that the regression model's results could not have been coincidental.

At least one of the four conditions must be satisfied to improve performance. Regression analysis

with beta coefficients can assess the relative importance of the four attributes (independent variables) in explaining performance variance. Of the four business intelligence attributes, (MrkVl - BkVl) has the most impact on performance. Large firms may profit from this measure not because of superior management but because they have a higher concentration of intangible assets. We looked at ROI (B3 = 0.29) and administrative costs per customer (B2 = -0.26, p = 0.059). The most difficult component of the balanced measurement framework is determining the learning and growth dimensions. The impact of business knowledge and organizational learning on decision-making is vague and difficult to quantify, and the CusComp variable yields no significant results. In conclusion, three of the four dimensions are significant. Based on the multiple regression analysis results, the first hypothesis is that the chosen business acumen correlates with improved business performance.

5. Conclusions, Limitations and Future Research

From the perspectives of senior decision-makers, this study investigated the influence that business intelligence (BI) in industrial organizations has had on the knowledge of Jordanians. This article examines the significance of tacit economic knowledge for business intelligence as quantified by intellectual capital in industrial enterprises and explores its application in assessing the impacts of learning, growth, performance, and both customer and financial perspectives. Each variable analyzes a distinct aspect of business intelligence (BI). Companies often utilize business intelligence (BI) to improve decision-making and service delivery efficiency. Efficiency, appropriate business intelligence coverage, and user happiness are our goals. Business intelligence, also known as BI, is the analysis of data gathered from internal and external sources to analyse markets and companies. Business intelligence (BI) enables you better to understand various aspects of your company's operations. As a result, it would be highly unlikely for the management of BI to lack interest in learning about the organization's performance. The research findings indicate that businesses need effective business intelligence support. The importance of business intelligence (BI) for decision-making is greater than that of learning, growth, and finances; however, the influence of customer variables is less significant. The results highlight the significance of intellectual capital as a measurement of the knowledge economy and its impact on performance.

References

[1] Anayat, S. and Rasool, G. Artificial intelligence marketing (AIM): connecting-the-dots using bibliometrics. Journal of Marketing Theory and Practice, 2024, 32.

[2] Thormundsson, B. AI market size worldwide from 2020–2030. statista.com, 2024.

[3] Sanaei, M.R. and Sobhani, F.M. Information technology and e-business marketing strategy. Information Technology and Management, 2018, 19.

[4] Russell, S.J. and Norvig, P. Artificial intelligence: A modern approach. Pearson Education Limited, 2016.

[5] Lucia-Palacios, L., et al. Technological opportunism effects on IT adoption, intra-firm diffusion and performance: evidence from the US and Spain. Journal of Business Research, 2014, 67.

[6] Wu, F., Mahajan, V. and Balasubramanian, S. An analysis of e-business adoption and its impact on business performance. Journal of the Academy of Marketing Science, 2003, 31.

[7] Srinivasan, R., Lilien, G.L. and Rangaswamy, A. Technological opportunism and radical technology adoption: an application to e-business. Journal of Marketing Research, 2002, 66.

[8] Seidlova, R., Poživil, J. and Seidl, J. Marketing and business intelligence with help of ant colony algorithm. Journal of Strategic Marketing, 2019, 27.

[9] Herschel, R.T. and Jones, N.E. Knowledge management and business intelligence: The importance of integration. Journal of Knowledge Management, 2005, 9.

[10] Zambon, S., Marasca, S. and Chiucchi, M.S. Special issue on "The role of intellectual capital and integrated reporting in management and governance: A performative perspective. Journal of Management and Governance, 2019, 23.

[11] Ginesti, G., Caldarelli, A. and Zampella, A. Exploring the impact of intellectual capital on company reputation and performance. Journal of Intellectual Capital, 2018, 19.

[12] Sultana, S., Akter, S. and Kyriazis, E. Theorising data-driven innovation capabilities to survive and thrive in the digital economy. Journal of Strategic Marketing, 2022, 1.

[13] Ifinedo, P. Impacts of business vision, top management support, and external expertise on ERP success. Business Process Management Journal, 2008, 14.

[14] Aboelmaged, M.G. Predicting e-readiness at firm-level: An analysis of technological, organizational and environmental (TOE) effects on e-maintenance readiness in manufacturing firms. International Journal of Information Management, 2014, 34.

[15] Sleep, S. and Hulland, J. Is big data driving cooperation in the c-suite? The evolving relationship between the chief marketing officer and chief information officer. Journal of Strategic Marketing, 2019, 27.

[16] Agostini, L. and Nosella, A. The adoption of Industry 4.0 technologies in SMEs: results of an international study. Management Decision, 2019, 58.

[17] Wamba, S.F. Big data analytics and firm performance: Effects of dynamic capabilities. Journal of Business Research, 2017, 70.

[18] Wachter, R.M. and Howell, M.D. Resolving the productivity paradox of health information technology: A time for optimism. JAMA, 2018, 320.

[19] Hung, W.H., Chang, L.M., Yen, D.C. and Lee, C.M. E-readiness of website acceptance and implementation in SMEs. Computers in Human Behavior, 2014, 40.

[20] Huang, M.H. and Rust, R.T. A strategic framework for artificial intelligence in marketing. Journal of the Academy of Marketing Science, 2021, 49.

[21] Carpanzano, E. and Knüttel, D. Advances in artificial intelligence methods applications in industrial control systems: towards cognitive self-optimizing manufacturing systems. Applied Sciences, 2022, 12.

[22] Chatterjee, S., Rana, N.P., Tamilmani, K., Sharma, A., Singh, N. and Dwivedi, Y.K. Adoption of artificial intelligence-integrated CRM systems in agile organizations in India. Technological Forecasting and Social Change, 2021, 168.

[23] Chen, C.W. and Lien, N.H. Technological opportunism and firm performance: moderating contexts. Journal of Business Research, 2013, 66.

[24] Chen, J. and Zhou, W. Drivers of salespeople's AI acceptance: What do managers think? Journal of Personal Selling and Sales Management, 2021, 42.

[25] Davenport, T., Guha, A., Grewal, D. and Bressgott, T. How artificial intelligence will change the future of marketing. Journal of the Academy of Marketing Science, 2020, 48.

[26] Albury, D. Fostering innovation in public services. Public Money & Management, 2005, 25, 51–56.

[27] Nithya, N. and Kiruthika, R. Impact of business intelligence adoption on performance of banks: a conceptual framework. Journal of Ambient Intelligence and Humanized Computing, 2021, 12(2), 3139–3150.

[28] Dehning, B., Richardson, V.J. and Zmud, R.W. The financial performance effects of IT-based supply chain management systems in manufacturing firms. Journal of Operations Management, 2007, 25.

[29] Stone, M., Woodcock, N., Wilson, M., Fulton, N. and Hirani, A. Artificial intelligence (AI) in strategic marketing decision-making: a research agenda. Bottom Line, 2020, 33.

[30] Bijker, M. and Hart, A.M. Factors influencing pervasiveness of organisational business intelligence. In: The Third International Conference on Business Intelligence and Technology, 2013, BUSTECH, Valencia, Spain, 21–26.

[31] Fedouaki, F., Okar, C. and Semma, E. A maturity model for business intelligence system project in small and medium-sized enterprises: an empirical investigation. International Journal of Computer Science Issues, 2012, 10, 61–69.

[32] Jorfi, S., Nor, K.M. and Najjar, L. The relationships between IT flexibility, IT-business strategic alignment, and IT capability. International Journal of Managing Information Technology, 2011, 3.

[33] Ransbotham, S., Kiron, D., Gerbert, P. and Reeves, M. Reshaping business with artificial intelligence: Closing the gap between ambition and action. Sloan Management Review, 2017, 59.

[34] Quinton, S., Canhoto, A., Molinillo, S., Pera, R. and Budhathoki, T. Conceptualising a digital orientation: antecedents of supporting SME performance in the digital economy. Journal of Strategic Marketing, 2018, 26.

[35] Sestino, A. and Mauro, A. Leveraging artificial intelligence in business: implications, applications and methods. Technology Analysis and Strategic Management, 2022, 34.

[36] Rialti, R., Zollo, L., Ferraris, A. and Alon, I. Achieving strategic flexibility in the era of big data: the importance of knowledge management and ambidexterity. Management Decision, 2020, 58.

[37] Song, M., Droge, C., Hanvanich, S. and Calantone, R. Marketing and technology resource complementarity: an analysis of their interaction effect in two environmental contexts. Strategic Management Journal, 2005, 26.

[38] Paschen, J., Kietzmann, J. and Kietzmann, T.C. Artificial intelligence (AI) and its implications for market knowledge in B2B marketing. Journal of Business and Industrial Marketing Management, 2019, 34.

[39] Cetindamar, D., Gursel, I., Harirchi, G. and Kazancoglu, Y. Explicating AI literacy of employees at digital workplaces. IEEE Transactions on Engineering Management, 2022.

[40] Bezuidenhout, C., Janse van Rensburg, H., Mathu, K.M. and Toit, A.D. The impact of artificial intelligence on the marketing practices of professional services firms. Journal of Marketing Theory and Practice, 2022, 31.