ISSN: 2001-015X

Journal of Intelligence Studies in Business

Journal of Intelligence Studies in Business

Vol. 14 No. 1 (2024)

Included in this printed copy:

Editor-in-chief:
Andrejs Cekuls

Journal of Intelligence Studies in Business Vol. 14 No. 1 (2024)

The **Journal of Intelligence Studies in Business** (JISIB) is a double-blind peer reviewed, open access journal published by University of Latvia, Latvia. Its mission is to help facilitate and publish original research, conference proceedings and book reviews.

FOCUS AND SCOPE

The journal includes articles within areas such as Competitive Intelligence, Business Intelligence, Market Intelligence, Scientific and Technical Intelligence and Geoeconomics. This means that the journal has a managerial as well as an applied technical side (Information Systems), as these are now well integrated in real life Business Intelligence solutions. By focusing on business applications, this journal does not compete directly with the journals that deal with library sciences or state and military intelligence studies. Topics within the selected study areas should show clear practical implications.

OPEN ACCESS

This journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge. There are no costs to authors for publication in the journal. This extends to processing charges (APCs) and submission charges.

COPYRIGHT NOTICE

Authors publishing in this journal agree to the following terms:

Authors retain copyright and grant the journal right of first publication with the work simultaneously licensed under a Creative Commons Attribution License that allows others to share the work with an acknowledgement of the work's authorship and initial publication in this journal. Authors are able to enter into separate, additional contractual arrangements for the non-exclusive distribution of the journal's published version of the work (e.g., post it to an institutional repository or publish it in a book), with an acknowledgement of its initial publication in this journal. Authors are permitted and encouraged to post their work online (e.g., in institutional repositories or on their website) prior to and during the submission process, as it can lead to productive exchanges, as well as earlier and greater citation of published work (See The Effect of Open Access.)

PUBLICATION ETHICS

The journal's ethic statement is based on COPE's Best Practice Guidelines for Journal Editors. It outlines the code of conduct for all authors, reviewers and editors involved in the production and publication of material in the journal. An unabridged version of the journal's ethics statement is available at https://ojs.hh.se/.

Publication decisions: The editor is responsible for deciding which of the articles submitted to the journal should be published. The editor may be guided by the policies of the journal's editorial board and constrained by such legal requirements as shall then be in force regarding libel, copyright infringement and plagiarism. The editor may confer with other editors or reviewers in making this decision. *Fair play*: An editor will evaluate manuscripts for their intellectual content without regard to race, gender, sexual orientation, religious belief, ethnic origin, citizenship, or political philosophy of the authors. *Confidentiality:* The editor and any ed- itorial staff must not disclose any information about a submitted manuscript to anyone other than the corresponding author, review- ers, potential reviewers, other editorial advisers, and the publisher, as appropriate. *Disclosure and conflicts of interest*: Unpublished materials disclosed in a submitted manuscript must not be used in an editor's own research without the express written consent of the author.

Duties of Reviewers

Promptness: Any selected referee who feels unqualified to review the research reported in a manuscript, is aware of a per- sonal conflict of interest, or knows that its prompt review will be impossible should notify the editor and excuse himself from the review process. *Confidentiality*: Any manuscripts received for review must be treated as confidential documents. *Standards of Objectivity*: Reviews should be conducted objectively. Refer- ees should express their views clearly with supporting argu- ments. *Acknowledgement of Sources*: Reviewers should identify relevant published work that has not been cited by the authors. *Disclosure and Conflict of Interest*: Privileged information or ideas obtained through peer review must be kept confidential and not used for personal advantage.

Duties of Authors

Reporting standards: Authors of reports of original research should present an accurate account of the work performed as well as an objective discussion of its significance. Fraudulent or knowingly inaccurate statements constitute unethical behavior and are unacceptable. *Data Access and Retention*: Authors are asked to provide the raw data in connection with a paper for ed- itorial review, and should be prepared to provide public access to such data (consistent with the ALPSP-STM Statement on Data and Databases). *Originality and Plagiarism*: The authors should ensure that they have written entirely original works, and if the authors have used the work and/or words of others that this has been appropriately cited or quoted. *Multiple, Redun- dant or Concurrent Publication*: An author should not publish manuscripts describing essentially the same research in more than one journal or primary publication. Submitting the same manuscript to more than one journal concurrently constitutes unethical publishing behaviour and is unacceptable. *Acknowl- edgement of Sources*: Proper acknowledgment of the work of others must always be given. *Authorship of the Paper*: Author- ship should be limited to those who have made a significant con- tribution to the conception, design, execution, or interpretation of the reported study. The corresponding author should ensure that all appropriate co-authors and no inappropriate co-authors are included on the paper, and that all co-authors have seen and approved the final version of the paper and have agreed to its submission for publication. *Disclosure and Conflicts of Interest*: All authors should disclose in their manuscript any financial or other substantive conflict of interest that might be construed to influence the results or interpretation of their manuscript. All sources of financial support for the project should be disclosed. *Fundamental errors in published works*: When an author dis- covers a significant error or inaccuracy in his/her own published work, it is the author's obligation to promptly notify the journal editor or publisher and cooperate with the editor to retract or correct the paper.

ARCHIVING

This journal utilizes the LOCKSS system to create a distributed archiving system among participating libraries and permits those libraries to create permanent archives of the journal for purposes of preservation and resto- ration.

PUBLISHER

University of Latvia, Latvia

First published in 2011. ISSN: 2001-015X.

Journal of Intelligence Studies in Business

EDITORIAL TEAM

Editor-in-Chief
PROF ANDREJS CEKULS (Latvia), University of Latvia

Founding Editors
PROF HENRI DOU (France), Groupe ESCEM
PROF PER JENSTER (China), NIMI

Honorary Editors
PROF JOHN E. PRESCOTT (USA), University of Pittsburgh
PROF BERNARD DOUSSET (France), Toulouse University

Regional Associated Editors
Africa
PROF ADELINE DU TOIT (South Africa), University of Johannesburg
America
PROF G SCOTT ERICKSON (USA), Ithaca College
Asia
PROF XINZHOU XIE (China), Beijing University
Europe
ASSOC PROF CHRISTOPHE BISSON (France), SKEMA Business School
Nordic
PROF SVEND HOLLENSEN (Denmark), University of South Denmark
PROF GORAN SVENSSON (Norway), Markedshøyskolen

EDITORIAL BOARD

PROF KARIM BAINA, École nationale supérieure d'informatique et d'analyse des systèmes, Morocco
DR EDUARDO FLORES BERMUDEZ, Bayer Schering Pharma AG, Germany
ASSOC PROF JONATHAN CALOF, Telfer School of Management, University of Ottawa, Canada
DR SBNIR RANJAN DAS, University of Petroleum & Energy Studies, India
PROF HENRI JEAN-MARIE DOU, ATELIS Competitive Intelligence Work Room of the Groupe ESCEM, France PROF BERNARD DOUSSET, Toulouse University, France
PROF ADELINE DU TOUT, University of Johannesburg, South Africa
PROF G SCOTT ERICKSON, Ithaca College, USA
PROF PERE ESCORSA, School of Industrial Engineering of Terrassa, Politechnical University of Catalonia, Spain
ASSOC PROF PER FRANKELIUS, Örebro University, Sweden
PROF BRIGITTE GAY, ESC-Toulouse, France
PROF MALEK GHENIMA, L'Université de la Manouba, Tunisia
PROF UWE HANNIG, Fachhochschule Ludwigshafen am Rhein, Germany
PROF MIKA HANNULA, Tampere University of Technology, Finland
PROF PER V JENSTER, Nordic International Management Institute, China
PROF SOPHIE LARIVET, Ecole Supérieure du Commerce Extérieur, Paris, France
PROF KINGO MCHOMBU, University of Namibia, Namibia
DR MICHAEL L NEUGARTEN, The College of Management, Rishon LeZion, Israel
PROF ALFREDO PASSOS, Fundação Getulio Vargas, Brazil
DR JOHN E PRESCOTT, University of Pittsburgh, USA
PROF SAHBI SIDHOM, Université Nancy 2, France
PROF KAMEL SMAILI, Université Nancy 2, France
PROF KLAUS SOLBERG SØILEN, School of Business and Engineering, Halmstad University, Sweden
ASSOC PROF DIRK VRIENS, Radboud University, Netherlands
PROF XINZHOU XIE, Beijing Science and Technology Information Institute, China
DR MARK XU, University of Portsmouth, UK

MANAGERIAL BOARD

WAY CHEN, China Institute of Competitive Intelligence (CICI)
PHILIPPE A CLERC, Director of CI, Innovation & IT department,
Assembly of the French Chambers of Commerce and Industry, France
ALESSANDRO COMAI, Director of Miniera SL, Project leader in World-Class CI Function, Spain
PASCAL FRION, Director, Acrie Competitive Intelligence Network, France
HANS HEDIN, Hedin Intelligence & Strategy Consultancy, Sweden
RAÍNER E MICHAELI, Director Institute for Competitive Intelligence GmbH, Germany
MOURAD OUBRICH, President of CIEMS, Morocco

Copyright © 2024 JISIB, Halmstad University. All rights reserved.

Journal of Intelligence Studies in Business Vol. 14 No. 1 (2024) pp. 4–5
Open Access: Freely available at: http://jisib.com/

EDITOR'S NOTE **VOL 14. NO. 1 (2024)**

Emerging Topics and Synergy Approaches in Competitive Intelligence

Competitive intelligence (CI) is increasingly being seen as a multifaceted approach that has transformed traditional strategic planning while providing practical solutions in a dynamic business environment (Boronat-Navarro et al., 2024; Cekuls, 2022, Samat et al., 2024). This review of research explores five recent studies that address the role of CI in strategic initiatives, sustainability, and technology integration to provide a multidimensional perspective on CI development.

The first study proposes an innovative strategic approach using a net assessment methodology used in national security. It aims to increase CI effectiveness by developing interdisciplinary strategies and addressing strategic gaps in CI units in the corporate sector. The most important role of this approach is in the development of proactive paradigms that reduce the likelihood of unforeseen risks and strengthen CI's position in strategic management.

Another study examines the role of CI in sustainable competitive advantage (SCA) in the telecommunications sector, focusing on the importance of information sharing (IS). This study demonstrates that a structured IS function can transform raw data into strategically relevant information, which is fundamental to achieving SCA. Both studies emphasize the need to transform CI from a reactive tool to a proactive strategic resource.

The next study focuses on the role of business intelligence (BI) in the relationship between strategic orientation and sustainable performance in the commercial banks sector. It empirically demonstrates that BI significantly improves the effectiveness of strategic orientation by helping to align organizational goals with sustainability objectives.

The mediating role of BI in supply chain management (SCM) and customer relationship management (CRM) are widely researched topics today. The study emphasizes that BI is integral in facilitating synergies between SCM and CRM, which streamlines operations and improves decision-making. The studies demonstrate that BI is not just a supporting tool, but a transformative element in CI ecosystems.

More nuanced perspective is offered to analyze psychological and cognitive barriers to CI processes, especially in small and medium-sized enterprises (SMEs). It identifies factors such as perception, trust, and employee engagement as essential in promoting information quality and CI effectiveness. The study highlights that integrating psychological insights into CI design improves user engagement, system effectiveness, and bridges the gap between technical and human-driven approaches.

Sustainability is emphasized as the main lens through which CI is analyzed. The second study confirms the importance of CI in ensuring the balancing of economic, social, and environmental dimensions in the banking sector. The results of the fourth study, in turn, demonstrate that effective information exchange is critical to achieving SCA and promoting sustainable development.

This overview of research offers a broad perspective on the synergistic approaches and innovations of CI. They not only highlight the strategic importance of CI in modern business, but also demonstrate its role in promoting sustainability and psychological insight. By integrating

technology and human factors, CI expands its traditional role, becoming a critical tool in promoting competitiveness and sustainable development.

I would like to express my gratitude to all contributors to this issue.

REFERENCES

Boronat-Navarro, M., Escribá-Esteve, A., & Navarro-Campos, J. (2024). Ambidexterity in micro and small firms: Can competitive intelligence compensate for size constraints? BRQ Business Research Quarterly, 27(3), 210–226.

Cekuls, A. (2022). Expand the scope of competitive intelligence. Journal of Intelligence Studies in Business, 12 (1), pp. 4-5.

Samat, M. F., Yusoff, M. N. H., Anual, N., & Mohamad, S. J. A. N. (2024). Mediating role of social media marketing adoption between TOE framework and competitive intelligence towards SMEs performance. Review of Integrative Business and Economics Research, 13(2), 224–238.

On behalf of the Editorial Board,
Sincerely Yours,

Prof. Dr. Andrejs Cekuls
University of Latvia, Latvia

Journal of Intelligence Studies in Business Vol. 14 No. 1 (2024) pp. 6–12
Open Access: Freely available at: http://jisib.com/

How Net Assessment Can Boost Competitive Intelligence Performance?

Avner Barnea
Bar-Ilan University, Israel
Avner.proci@gmail.com

Received 2 May 2024; accepted 19 June 2024

ABSTRACT In the business sector, Competitive Intelligence (CI) units are often responsible for overseeing the assessment delivered to the top executives regarding competitors' threats and opportunities and comprehending the meaning of external changes in the related markets. Unfortunately, there is insufficient attention to how these units can be more valuable and help corporations avoid strategic surprises. This paper offers a new concept that will create better value using the Net Assessment approach in corporations.

The approach, as detailed in my recent book, 'We Never Expected That: A Comparative Study of Failures in National and Business Intelligence" (Barnea, 2021), illustrates the practicality of transplanting strategies from the national intelligence sphere to bolster business intelligence. It underscores the potential for cross-pollination of ideas and improvement between these two domains.

Net Assessment, a robust framework for analyzing national security threats, has been a cornerstone of the United States defense establishment's strategy for years, yielding significant results. This paper advocates for its integration into the toolkit of CI units and executives, underscoring its potential to deliver substantial performance enhancements for corporations.

KEYWORDS: Net assessment, strategic surprises, competitive intelligence, business strategy

INTRODUCTION

The Nobel Prize winner Daniel Kahneman claims that "the ability to be surprised is an essential aspect of our mental life and surprise itself is the most sensitive indicator of how we understand our world and the expectations we have of it." Kahneman (Kahneman, 2013, pp. 85-86) divides surprises into two types: active surprises and conscious surprises - one knows that he expects a particular event to happen and will be surprised if the event actively expected does not happen. However, there is a much broader category of passively expected events: those that do not expect but are not surprised when they occur. These are regular events, but they must be more specific to make one actively expect them.

In intelligence, surprises can be associated with Kahneman's second type, tolerable surprises, since information is monitored regularly and events are expected since they are part of the intelligence routine. There is no certainty that they will occur. If the intelligence officer does not turn his activity into active anticipation to promote a surprise of the first kind, he will have difficulty preventing the surprise. Under certain conditions, tolerable expectations become active expectations, thus increasing the chance of avoiding a surprise. These surprises occur not only in national security but also in business. Corporations devote significant efforts to preventing strategic surprises in business activity (McGonegle & Misner-Elias, 2016).

Companies operate in an increasingly complex world. Business environments have become more diverse, dynamic, interconnected, and less predictable than ever. However, many firms still pursue classic approaches to avoid surprises and build sustainable strategies designed for more stable times, emphasizing analysis and planning focused on maximizing short-term performance rather than long-term robustness (Fuld & Chodnowsky, 2010). How are they faring (Reeves et al., 2016)? More companies are using strategy disciplines emphasizing analysis to understand how they can perform better. CI units inside organizations often support strategic units striving to better understand external changes and their implications, mainly for competitive advantages (Grant, 2005, p. 12).

There is also a growing need for strategic foresight to enable senior executives to make better decisions about the future and competitors' moves (Webb, 2024). CI units often play an essential role in supporting decision-makers in better understanding competitors' moves and market changes. However, it looks as if CI practices do not have enough strategic inputs and are inclined toward supplying tactical needs, and thus, their added value to senior executives is limited (Cavallo et al., 2021, pp.250-175).

Both national intelligence and the business sector are making ongoing efforts to improve decision-making regarding threats that can affect the strength of organizations (and states), especially if they have strategic implications. The intelligence discipline is essential to widening the scope of strategic opportunities and threats (Barnea, 2021).

Improve the performance of CI.

CI discipline needs to be established better, as in national security, where it usually gets high priority and significant resources (Ibid.). However, many corporations, especially large ones, have in-house CI units. These units are responsible for delivering intelligence assessments to the executives, who find it challenging to be recognized as valuable through intelligence already existing in the corporation (Stauffer, 2003). Many efforts have been devoted to making assessments more professional to deliver better value-added value. These units are usually small, so they must be well-focused on identifying timely external developments that can directly affect businesses. Sometimes, their value is also in noticing business opportunities due to their close monitoring of competitors and market trends (McKinsey, 2008).

The scope of CI units is usually narrow and needs to touch sufficiently strategic issues (Barnea, 2022). These units are expected to produce much more valuable intelligence (Ezigbo& Uduji, 2013). There is a continuous effort to find ways to make them more efficient and to deliver better outputs that meet the expectations of senior executives (Ibid.)

In addition to central CI units located in the headquarters of corporations, mostly under Marketing, to increase the competitiveness of corporations, sometimes we can find "islands" of CI activity inside strategic business units (SBU), which are profit centers that focus on product offerings and market segments. In these cases, the intelligence is done independently, usually without the required expertise and functional guidance, and that is why they have limited value, mainly contributing to the specific needs of the SBUs (Cavallo et al., 2021). In other cases, usually in large corporations, in addition to CI units at the headquarters of the corporation, there are CI units located officially in SBUs that serve only the needs of these divisions but are not integrated into the overall intelligence effort of the corporation (Jaworski et al., 2002, pp. 279-307).

Thus, practically different SBUs have different intelligence requirements. At the same time, their concerns are different, i.e., emphasize different industries, new technologies, new entrants, unexpected moves by competitors, etc. It is witnessed that CI in organizations is usually divided between corporations with only centralized CI activity and those with decentralized intelligence, usually located inside the SBUs. Practically, the processes by which the activities of CI in organizations are distributed or delegated away from being only in a central location, and responsibilities are delegated to several SBUs without giving enough consideration to building an integral effort with a better value to the overhole needs of the corporation (Stauffer, 2003).

One of the main areas for improvement of the decentralized models is that, too often, each unit operates independently, and there need to be unified efforts to build a comprehensive picture of external threats in the primary CI entity.

Most CI units do not use a formal feedback measurement process to determine their effectiveness or use of the CI (Davidson, 2001, pp. 25-38). These are the reasons:

1. When asked to prove their value, formal feedback is necessary for the units.tt
2. It also makes evaluating the unit's performance hard and identifying areas where it can improve (Barnea, 2022).

Some scholars focus on effective means and capabilities for gathering intelligence, and others focus on different analytical models. However, there is a need to learn more about how to improve analysis practically inside the organization. The need to enhance the level of analysis is mainly because CI units are usually small and need more professionals with the right expertise in the fields that require the decision-making process. Another reason is the need for more knowledge of relevant methodologies supporting the assessment process (Tanir, 2023).

About Net Assessment

There is a need not only to define net assessment but also to present its key features and focus on its value to understand better the external environment, which, according to Grant, is: "the outside influences and factors that affect a firm's decisions and its performance." (Grant, 2005, pp. 12-14). Scholars of organizational behavior are aware that "Organizations that are most successful in uncertain environments are those in which close attention is paid to the environment so they can spot threats and opportunities, and where intelligence is shared in a digestible and meaningful manner, thereby enabling relevant organizational members to respond swiftly and effectively" (Daft, 2012, p.157).

So, the challenge is reacting appropriately based on information regarding changes in the external environment. As a result, there is a great need to understand the meaning of changes outside the corporation to highlight their meaning to the decision-makers. Business strategy helps to determine how the firm will deploy its resources within the environment to help achieve its long-term goals. As Grant emphasizes: "Strategy analysis is the idea that we can systematically analyze the reasons for business success and failure and apply this to learning formulations" (Grant, 2005, p. 26).

Paul Bracken defines net assessment as "a way of tackling problems from a certain distinctive perspective that involves skills that can be improved" (Bracken, 2006, pp. 91-93). It examines a country, its competitors, and its relative strengths and weaknesses to identify strategic risks and opportunities in advance (Ibid.).

Net assessment emphasizes strategic interactions by breaking significant problems into smaller, more manageable pieces. This is why big organizations are divided into departments.

In this paper, I propose to expand the scope of the Net Assessment approach and apply it to intelligence assessment in corporations to understand their competitors better and thus be more valuable to the decision-making process. Analyzing threats rising from the external environment affecting the performance of entities is quite similar to that of states and business corporations. While the US defense and government frequently use net assessment, there is no reason not to consider using it in business (Hoffman, 2021). For example, a business executive needs to know how to control costs, satisfy customers, and plan where his company will be. To do so, he uses accounting, marketing, and forecasting capabilities. Each field offers a particular perspective on the business and involves specific skills.

By knowing how to use the net assessment approach, this business executive can make better decisions because he will consider external factors such as competitors, market trends, and macroeconomic considerations in the decision-making process. It looks as if the current tools are not performing well enough. These tools include scenario planning, which focuses on decision drivers and dynamics; forecasting, to help budget planning and estimate future growth; trend analysis, to

explore possible developments and define potential turning points; and competitor insights, to anticipate probable competitor moves (Saffo, 2007). These tools help answer essential questions but are not focused on threats. Here, net assessment seems to give better answers.

Net Assessment demands that different units assess the external factors that influence the corporation. Sometimes vital information is known to certain people in the corporation, but they do not share it because they are unaware of the need to know. Net assessment emphasizes that many will be involved as they may have critical information about the external environment as part of their responsibilities. Andy Grove, the Chairman of Intel, describes an excellent example. Grove stated that with the contribution of his employees, he was aware of a significant threat from the Japanese memory producers in the mid-eighties that could be very harmful to Intel (Grove, 1997, pp. 2-3. 18-23).

By receiving an alert, Intel could manufacture a quick technological response to protect its competitive advantage. The belief that critical information would be aggregated in one unit (for example, strategic planning or competitive intelligence) fails to understand how organizations work. The essential capability of the net assessment approach is the need to integrate knowledge about the external environment, for example, moves by competitors, together with the internal understanding of executives. It is advised that the intelligence will be kept in a single place. It can be in strategic planning units, competitive intelligence, or other functions like business development if a corporation makes special efforts in M&A activity.

There is a possibility to look into organizations also as combating individuals, teams, and whole organizations, which often work in silos of thought, process and product. The Silo Effect is that people are trapped inside their little specialist units, social groups, teams, or pockets of knowledge, which makes it impossible for them to see the integral picture (Tett, 2015, pp.11-12). By its definition, net assessment is striving to make sure that local business entities inside the organization will take an active place in the process of decision-making and will enrich the organization with their unique perspectives.

We have witnessed that dedicated units are focused on specific areas in decentralized organizations. Still, there is a risk that they will be excluded from the decision-making process, and their added value will not be considered. The net assessment approach will encourage units to take an active role in the decision-making and building the comprehensive picture. Usually, it will be done by using internal information technology (IT) platforms for sharing information and, in addition, an awareness of executives to the potential of mobilizing various points of view. The outcome produces an overall "net" assessment of the competitive challenges.

Methodological approach

The one often applied to conduct the net assessment is summarized in five sequential steps (Spevacek, 2017):

- Measurements: collecting empirical data in a comparable format.
- Estimates: discovering, describing, and distinguishing those elements that are unmeasurable but important.
- Analysis: evaluating competitive strengths, weaknesses, vulnerabilities, and opportunities.
- Balancing: anticipating opportunities to apply strength to vulnerability in compared postures.
- Triumph: Identifying and projecting into the future opportunities for converting favorable balances into business outcomes.

The analyst should base his assessment on four pillars: trends, emphasizing the long term; strategy, the competitor strategy; and asymetrics. He should identify areas of competitive advantage for the other side and use scenario analysis to test hypotheses (Ibid.)

What will be changed?

While CI has become recognized as a vital, legal, and ethical support for many corporate functions (McGonagle & Vella, 1999), CI practitioners, especially CI directors, deal with internal criticism regarding their limited added value. They seem to face unfulfilled expectations from top

executives and other management ranks who believe CI units can be more helpful (Barena, 2016).

Criticism of CI units can be divided into two: the first is that they are not helpful for the ordinary needs of executives and units, and the second occurs in much more serious events, in cases that can be identified as intelligence failures, which have a significant impact on the performance of a corporation or one of its units.

The following example may describe the value of net assessments. In the 1970s, General Motors focused on the moves of its competitors, Ford and Chrysler. They have made efforts to know what the competition is planning and to understand how to operate more effectively and reduce costs and other means to preserve their competitive advantage. While this was the focus of these three on each other, they missed the uprising of the Japanese car manufacturers, mainly Nissan and Toyota, and their entering the US car market. Even after the Big Three understood that they were losing market share, they also needed to catch up on how the Japanese have competed. Only later did the three leading US car manufacturers comprehend how the Japanese managed their production, giving them an advantage over competitors (Bracken, 2006, p. 97). Net assessment has long emphasized getting to know these differences, such as different uses of technology, strategic culture, and others, to help build a strategy to compete successfully with Japanese cars. Getting these differences out on the table as net assessment requires intends to help develop an answer to this situation. Recognizing these strategic differences is often the first step to improving strategic inferiority.

Another good example is the competition between Kodak and Fuji (Fuld, 2010, pp. 19-27). Each knew that the other was approaching digital photography. While Fuji acted on imperfect knowledge, Kodak, the market leader, backed up its digital innovations and denied that they were a threat. With its innovative digital technology, Kodak failed to act, while Fuji achieved significant market share in the photo processing machines in the retail shops, which Kodak dominated. It became apparent that Kodak needed to have understood the threat by Fuji by not using a solid assessment tool like nest assessment, which would warn about the emerging threat in advance.

Through net assessment, it will be possible to focus on what is needed to know rather than analyzing what is already known. It will be done by analyzing each competitor independently and considering what is not known and only in a further stage to compare the findings in different areas like technology, products, research and development, and other factors that may help to develop a strategy that will give a competitive advantage. Net assessment calls for consciously thinking about the period of the analyzed competition. It highlights the importance of recognizing gradual changes that may have significant long-term effects. Another aspect valued by net assessment is the need to understand and account for the behavior of organizations and individuals within them, especially those holding influential positions. This is different from focusing on immediate challenges like short-term decisions. An example is the exploded change in the US motorcycle market in the late ’60s. Through competitive proposals, Japanese motorcycles rose to the top of US-known brands like Triumph, BSA, Norton, and Harley. The US motorcycle manufacturers did not understand the Japanese strategy and woke up too late (Cameron, 2020).

CONCLUSIONS

The net assessment approach provides a framework for analyzing competition. It offers a strategic framework that allows businesses to explore their competition from multiple perspectives. By understanding the strategic interactions and asymmetries between competitors, companies can gain insights into their competitors' strategies and identify their opportunities and vulnerabilities.

Net assessment consists of the following perspectives and associated skills that guide analyzing changes in the external environment and business strategy and businesses in several ways:

- Strategic interactions: Net assessment emphasizes breaking complex problems into smaller, more manageable pieces. Understanding

these corporations' actions is crucial in analyzing strategic interactions.

- Longer time spans: Net assessment requires understanding the long-term trends and changes in a competitive environment.
- Getting things right with some thought: Net assessment emphasizes identifying and addressing essential but overlooked problems rather than focusing on immediate challenges.
- The importance of socio-bureaucratic behavior: Net assessment emphasizes the need to understand dynamics in strategic analysis.
- Strategic asymmetries: Net assessment acknowledges that competitors recognizing and understanding these strategic asymmetries is crucial.
- The Multifaceted nature of strategy: Net assessment emphasizes the need for strategies to incorporate these elements and work cohesively.

Overall, the net assessment is expected to provide businesses with a better-structured approach to analyzing competition, understanding long-term trends, considering organizational dynamics, recognizing strategic asymmetries, and developing multifaceted strategies. By applying these principles, businesses can gain a competitive advantage and make more informed strategic decisions.

About the author

Dr. Avner Barnea is a research fellow at the National Security Study Center (NSSC) at the University of Haifa in Israel. He is also a lecturer in the School of Business Administration at Netanya Academic College and the Department of Information Science at the Bar-Ilan University in Israel. He is a former senior member of the Israeli Security Agency (ISA). He teaches Perspective on Strategic Intelligence in Government and Business at Reichman University. He received a Ph.D. in International Relations from the University of Haifa. Barnea is the author of the book We Did Not Anticipate That: Comparative Analysis of Intelligence Failures in the National Field and the Business Field (2019, in Hebrew), Resling Publishing (Tel Aviv). His new book, *We Never Expected That: A Comparative Study of Failures in National and Business Intelligence* was published in the US (New York, Lexington Books) in 2021.

REFERENCES

Barnea, A. (2016). Study of Competitive Intelligence in Israel: 2016 Update. *Journal of Intelligence Studies in Business*. Vol. 6, No. 2, pp. 5-16 https://ojs.hh.se/index.php/JISIB/article/view/156

Barnea, A. (2022). Measuring the value of Intelligence in Business. *Competitive Intelligence Magazine,* Vol, 22, January.

Barnea, A. (2021). *We Never Expected That: A Comparative Study of Failures in National and Business Intelligence*. New York, Lexington Books.

Bracken, P. (2006). Net assessment: a practical guide. *Parameters*, 36, no.1, p. 91, 97.

Cameron, K. (2020). As the US Market Exploded, Japan Took Over. *Cycle World*, September 4. https://www.cycleworld.com/story/bikes/as-the-us-market-exploded-japan-took-over/

Cavallo, A. Sanasi, S. Ghezzi, A. & Rangone, A. (2021). Competitive intelligence and strategy formulation: connecting the dots. *Competitiveness Review*, Vol. 31 No. 2, pp. 250-275. https://doi.org/10.1108/CR-01-2020-0009

Daft, R. (2012). *Organization Theory and Design*. USA, South-Western Cengage Learning, p. 157.

Davison, L. (2001). Measuring competitive intelligence effectiveness: Insights from the advertising industry. *Competitive Intelligence Review,* Volume 12, Issue 4, pp. 25–38.

Ezigbo, C. & Uduji, J. (2013). Manage Competitive Intelligence for Strategic Advantage—European *Journal of Business and Management*, Vol.5, No.3.

Fuld, L. & Chodnowsky, M. (2010). The Art of Anticipating Disruptions. *Fuld and Co*.

Fuld, l. (2010). *The Secrets Language of Competitive Intelligence*. Dog Ear Publishing, Indianapolis, pp. 19–27.

Grant, R. (2005). *Contemporary Strategic Analysis*. Blackwell Publishing, p. 12.

Grove, A. (1997). *Only the Paranoid Survive*. Profile Books, pp. 2–3, 18–23.

Hoffman, F. (2021). Net Assessment and Military Strategy: Retrospect and Prospective Essays. *Joint Forces Quarterly*, no. 102. https://ndupress.ndu.edu/Media/News/News-Article-View/Article/2680725/net-assessment-and-military-strategy-retrospective-and-prospective-essays/

Jaworski, B. Macinnis, D. & Kohli, A. (2002). Generating Competitive Intelligence in Organizations. *Journal of Market-Focused Management,* 5 (4), pp. 279-307.

Kahneman, D. (2013). *Thinking. Fast and Slow*. Tel Aviv, Kinneret Matar, pp. 85-86. Hebrew edition.

McGonagle, J. & Misner-Elias, M. (2016). The Changing Landscape of Competitive Intelligence: Two Critical Issues Invested. *Salus Journal*, No. 1 Issue 4.

McGonagle, J.J. & Vella, C.M. (1999). *The Internet age of competitive intelligence*. London: Quorum Books.

McKinsey Global Survey Results, (2008). How Companies Can Understand Competitor's Moves: McKinsey Global Survey results. *McKinsey Quarterly*, January 1. https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/how-companies-can-understand-competitors-moves-mckinsey-global-survey-results

Reeves, M. Levin, S. & Ueda, D. (2016). The Biology of Corporate Survival. *Harvard Business Review*, January -February. The Biology of Corporate Survival (hbr.org)

Saffo, P. (2007). Six Rules for Effective Forecasting. *Harvard Business Review*, July-August, 2007. https://hbr.org/2007/07/six-rules-for-effective-forecasting

Spevacek, A. (2017). Net assessment: Overview and assessment. *USAID Knowledge Services Center*, chrome extension://efaidnbmnnnibpcajpcglclefindmkaj/https://pdf.usaid.gov/pdf_docs/PA00SXMH.pdf

Stauffer, D. (2003). The Power of CI. *Harvard Management Update*, U0310C, October.

Tanir, B., (2023). Competitive Intelligence: Your Secret Weapon for Business Growth. *Forbes*, November 13. www.forbes.com/sites/forbestechcouncil/2023/11/13/competitive-intelligence-your-secret-weapon-for-business-growth/?sh=34f326dd3df3

Tett, G. (2015). *The Silo Effect*. London: Little Brown, p. 11.

Webb, A. (2024). Bringing True Strategic Foresight Back to Business. *Harvard Business Review*, January 12, https://hbr.org/2024/01/bringing-true-strategic-foresight-back-to-business.

Journal of Intelligence Studies in Business Vol. 14 No. 1 (2024) pp. 13–30
Open Access: Freely available at: http://jisib.com/

The Impact of Strategic Orientations on Sustainable Performance: The Moderating Role of Business Intelligence at Jordanian Commercial Banks

Khaled Mahmoud Al Shawabkeh
World Islamic Sciences and Education University, Jordan
email: Khaled.alshawabka@wise.edu.jo

Received 29 May 2024; accepted 21 August 2024

ABSTRACT Jordanian commercial banks are achieving sustainable performance by balancing economic, social, and environmental dimensions, aiming for long-term profitability, community development, and environmental awareness, which are crucial for the banking sector's continuity and development. The current study aims to investigate the impact of strategic orientations on sustainable performance and the moderating role of business intelligence at Jordanian commercial banks. This study collects the primary data from 218 managers at the top and middle levels of Jordanian commercial banks. This study utilized the Statistical Package for the Social Sciences (SPSS) to analyze hypotheses. The study revealed that strategic orientations (learning orientation, market orientation, digital orientation, and entrepreneurial orientation) had a statistically significant impact on sustainable performance at Jordanian commercial banks, with an explanatory power of (R^2= 44.4%). It was also demonstrated that business intelligence had a statistically significant impact on improving the impact of strategic orientations on sustainable performance at Jordanian commercial banks, with an explanatory power of (R^2= 45.3%). According to the results of the study, the most important recommendations for the banks surveyed are as follows: Jordanian commercial banks should adopt a sustainable strategy through their strategic orientations, focusing on social responsibility, environmental preservation, and environmental interest projects. They should utilize business intelligence, foster a sustainability culture, communicate with stakeholders, and continuously improve performance.

KEYWORDS: Business Intelligence, Strategic Orientations, Sustainable Performance, Digital Orientation, Jordanian Commercial Banks

1. INTRODUCTION

Jordanian commercial banks encounter challenges in a constantly changing business environment due to globalization, intense competition, and technological advancements, as well as handling customer preferences and needs. Therefore, organizations that fit with the concepts of sustainable development must modify their organization's performance measuring methodologies, which frequently involve value judgments and complicated structures with several business streams, roles, and operations (Keeble et al., 2003). Building sustainably entails using resources effectively in order to meet the needs of future generations as well as current ones, it is based on three pillars: environmental, economic, and social (Nair & Nayar, 2020).

Strategic management approaches demonstrated strategic orientation dimensions such as market orientation, entrepreneurial orientation, learning orientation, and technological orientation, all of which are vital for efficient operations (Azaj et al., 2020). Moreover, strategic management focuses on continually monitoring internal and external circumstances for rapid changes, particularly when confronted with rising

change, such as the global economic recession, which implies adaptability for survival (David, 2011, 8). In the same context, an organization's ability to sustainability depends on its ability to maintain distinctive competencies determined by its durability and inimitability; where durability refers to a firm's ability to depreciate or become obsolete, while inimitability refers to its irreplaceable unique skills (Wheelen et al., 2018, 140).

The concept of strategic orientation is frequently linked to organizational success or failure within business situations, which refers to organizational beliefs, traits, motives, and aspirations that lead to strategic analysis as well as growth (Wood, 1991; Wood & Robertson, 1997). According to Gatignon and Xuereb (1997) although the business's strategic orientation might lead to superior performance through market-driven concepts, its effect on creating innovative products is debatable.

Underpinning the resource-based view (RBV), empirical evidence indicates that an organization's strategic orientations predict superior performance due to their influence on the way organizations create and modify behaviors and capabilities. Market orientation and entrepreneurial orientation are being widely investigated as distinct or simultaneous competitive advantage factors (Kindermann et al., 2021).

Based on historical data, prior performance, and alternative scenarios, BI transforms data into meaningful information via individual analysis, enabling forecasting, hypothetical analysis, spontaneous data access, and strategic decision-making (Negash & Gray, 2004). Furthermore, according to the marketing approach literature, an organization's strategic orientation in the context of a market-driven organization has an important indication of its performance, involving their perception of its achievement of innovative products (Day, 1994; Cooper, 1994; Narver & Slater, 1990; Slater & Narver, 1994; Gatignon & Xuereb, 1997).

The rapid growth of new technologies has significantly impacted the business intelligence (BI) market, leading to significant technological and organizational innovations, promoting knowledge diffusion, and forming the foundation of business decision-making processes (ArnetzIiha, 2023). Business intelligence (BI) is an important tool for businesses that affects all activities and sectors. The use of BI effectively leads to enhanced business performance, but the key is in how firms use the data (Howson, 2013, 4).

Based on those arguments, this study attempts to fill a research gap by measuring the impact of strategic orientations on sustainable performance through business intelligence as a moderator variable at Jordanian commercial banks. This study utilized previous literature as a background for its variables, and it adopted the quantitative analytical approach to measuring the expected effect between the variables through the statistical program SPSS.

Previous studies regarding the impact of strategic orientations on sustainable performance at Jordanian commercial banks, with business intelligence as a moderator variable, show a research gap in linking these variables according to what the researcher found. The main research question is: **What is the impact of strategic orientations on sustainable performance through business intelligence as a moderator variable at Jordanian commercial banks?**

The study aligns with key literature and theories to support hypothesis development. Next, the methodology is illustrated, followed by data analysis. Then move toward the results and discussion, as well as the conclusions and recommendations.

2. THEORETICAL FRAMEWORK:

2.1. Strategic Orientations (SO)

2.1.1 Strategic orientations concept:

The notion of strategic orientation is becoming increasingly recognized throughout scholarship on marketing, entrepreneurship, and strategic management as a key concept affecting organizational performance and a crucial means of maintaining competitive advantage (Aloulou & Fayolle, 2005; Aloulou, 2019).

Three streams of research are concerned with investigating the link between performance and strategic

orientation: first, a typology of orientations developed by Milles and Snow; the second, the general approaches proposed by Porter of concentration, differentiation, and cost leadership; and the third, Venkatraman's (1989) investigation of strategic orientations as a setup of market, entrepreneurial, learning, and technological orientations, which examined the collective and synergistic consequences of these orientations on organizational performance (Azaj et al., 2020).

The concept of "strategic orientations" was initially introduced by Venkatraman (1989), who characterized it in terms of the following dimensions: "strategic aggressiveness, analysis, defensiveness, futurity, pro-activeness, and riskiness". In addition to, he proposed measuring an organization's strategic orientation by its organizational processes in these six categories, based on management perceptions and beliefs (Azaj et al., 2020).

According to Venkatraman (1989), strategic orientation is a broad pattern of the several ways that an organization's goals are achieved, including a focus on the organizational structure at the business unit level. Narver and Slater (1990) mentioned that strategic orientations represent the direction that an organization takes to construct actions for continually improved performance.

Furthermore, the term "strategic orientations" indicates management perspectives and attitudes regarding the way an organization handles the product-service market in a strategic manner in a number of aspects, including analysis, aggressiveness, defensiveness, and risks- taking (Venkatraman, 1989; Hakala, 2011; Huikkola & Kohtamäki, 2019). Obeidat (2016) explored that there is no single agreed-upon definition of strategic orientation. There is controversy regarding how to define orientation, and many streams of literature have generated a range of conceptual frameworks.

Strategic orientation represents the value that an organization places on particular activities while dealing with external factors in order to develop capabilities (Day, 1994; Helfat & Peteraf, 2015). Moreover, the strategic orientations of an organization determine its strategic management method, which is influenced by both external and internal environmental variables. It directs company behavior and provides broad frameworks for strategic decisions and orientations, influencing personnel within the firm to either positively or negatively affect its strategy (Slater et al., 2006; Uzoamaka et al., 2020).

Moreover, strategic orientation has been realized to be a crucial cultural feature in the research of the relationship among corporate culture and business performance in the field of strategic management (Weinzimmer et al., 2012). According to Noble et al. (2002), orientation refers to the adaptation of organizational culture that guides its relations with the environment.

Zhou et al. (2005) described strategic orientation as the direction that organizations take in developing the appropriate behavior for obtaining superior performance; innovations and competitiveness are the two primary strategic orientations allowing an organization to accomplish higher efficiency in the long term. Furthermore, strategic orientations are crucial for business survival and sustainability because they direct organizations toward achieving their goals; furthermore, researchers in marketing, entrepreneurship, and managerial fields have spent plenty of effort and time attempting to identify these types of orientations (Ogbari et al., 2018).

Strategic principles such as technology, market, learning, and entrepreneurial orientations direct a company's actions and conduct. Nonetheless, there isn't a single, widely recognized explanation of what a firm's strategic orientation is, as various literature streams have generated a variety of perspectives "Orientation" indicates a broad stream of ideas or domains of interest (Hakala, 2011).

2.1.2 Strategic orientations dimensions:

The current study consequently investigates four strategic orientations: learning orientation, market orientation, digital orientation, and entrepreneurial orientation.

1. Learning orientation:

Learning orientation is an organization's approach in the direction of learning, depending on organizational

commitment, vision, and open mind actions (Ashal et al., 2021). Syahdan et al. (2020) explored Learning orientation as an organizational capability to understand customers' demands, learn through experiences, and strive to confront environmental changes. Moreover, learning orientation defined as organizational activities that attempt to improve competitive advantage throughout exploration and exploitation knowledge (Uzoamaka et al., 2020).

According to Senge (1990) learning orientation is the organization's capabilities that concerning about acquiring knowledge and experience about competitors and customers to enhance performance. Learning orientation is "an organization-wide strategy to enhance competitive advantage by creating and using knowledge about customer needs, market changes, and competitor actions, comprising four components: commitment to learning, shared vision, open-mindedness, and intraorganizational knowledge sharing" (Calantone et al., 2002). In the same context, Hakala (2011) explored learning orientation as an organizational capability towards acquiring, sharing, and implement knowledge to acquire a competitive advantage.

2. Market orientation:

Market orientation defined as the degree to which an organization's strategy fulfills its customers' desires and demands (Ashal et al., 2021). Market orientation is a cultural norm in a learning organization, prioritizing customer value creation and stakeholder interests, but may not encourage risk-taking (Slater & Narver, 1994). In the same context, Narver and Slater (1990) explored market orientation theory that comprises three elements: competitor orientation (which measured by competitors' information, high responsiveness to competitors' activities and strategies, and exploit competitors' opportunities), customer orientation (which measured by customers' value, commitment, demands, and satisfaction), and interfunctional coordination. In addition to, Market orientation consists of customer, competitor, and inter-functional coordination dimensions, requiring firms to monitor customer needs, innovate, and implement strategies for competitive advantage (Obeidat, 2016).) According to Tho (2019) marketing orientation is an organization's vital strategic orientation, focusing on understanding three components (competitors, customers, and the macro-environment).

3. Digital orientation:

Digital orientation is an "organization's guiding principle to pursue digital technology-enabled opportunities to achieve competitive advantage, encompassing the dimensions of digital technology scope, digital capabilities, digital ecosystem coordination, and digital architecture configuration" (Kindermann et al., 2021). According to Bendig et al. (2023) digital orientation is a strategic approach to address environmental challenges. It emphasizes the effectiveness of organizations in technologically dynamic environments in digitalizing their business models.

Digital orientation is "the deliberate strategic positioning of an organization to take advantage of the opportunities presented by digital technologies" (Quinton et al., 2018). Moreover, digital orientation is a strategic orientation focusing on digital technologies like social networks and mobile applications, involving strategic changes in business models and aims to foster digital transformation and provide a competitive advantage (Rupeika-Apoga et al., 2022). Zheng (2024) defined digital orientation as a strategic approach to integrating digital technologies into business processes to create improved value.

4. Entrepreneurial orientation:

Entrepreneurial orientation is a strategic orientation that involves practices, processes, and decision-making actions conducting to novel items, relating to proactive, innovation, inventiveness, and risk-taking (Tho, 2019). Alkhawaldeh and Shawabkeh (2023) discussed entrepreneurial orientation as an extensively standard theme in literature, is the process of individuals or groups organizing efforts to confirm value and encounter demands through innovation and inimitability, handling sustainable performance. In the same context, Uzoamaka et al. (2020) mentioned that entrepreneurial orientation involves

decision-making practices promoting creativity, innovation, competitiveness, risk-taking, autonomy, and proactiveness, influencing demand and supply sectors, and driving a free market economy.

2.2. Sustainable Performance (SP)

Sustainability is a popular literature topic, with thousands of articles published annually. However, most focus on the environment, ignoring economic and social aspects. Literature often lacks clarity on measuring and interpreting sustainability performance (Buyukozkan & Karabulut, 2018). Elkington (1998) emphasized the importance of a triple bottom line approach in business strategies, integrating environmental, social, and economic considerations. This approach extends an organization's typical economical approach, prioritizing sustainability plans for future generations and enhancing their economic performance. According to Keeble et al. (2003), stakeholders are pressuring organizations to disclose their social and environmental performance in addition to their financial performance. Van Lieshout et al. (2021) defined Sustainability as the measurable outcomes of managerial and corporate actions pertaining to the firm's interactions with its external environment.

In a globalized marketplace, major businesses comprehend that short-term profit alone is insufficient to be successful and that sustained behavior is critical; to achieve long-term sustainability, organizations have to balance their economic, environmental, and social performance (Stanciu et al., 2014). Furthermore, in the contemporary industrialized world, sustaining performance is crucial for success, including incorporating economic, social, and environmental objectives into fundamental business practices to maximize value (Zhai et al., 2018).

Sustainability performance measures an organization's resource efficiency towards objectives, incorporating societal, economic, and environmental goals into corporate strategies, which gradually enhances profitability (Appiah-Nimo & Chovancova, 2020). Scholars define sustainable performance as an organization's ability to attain remarkable social and environmental performance while fulfilling organizational objectives, legitimacy in the community, customer satisfaction, commitment, and credibility. Additionally, it eliminates expenses, waste, and consumption, which enhances economic performance (Al-Humaidan et al., 2022).

Moreover, Sustainable performance in a business involves fulfilling long-term customer and stakeholder expectations through effective leadership, employee awareness, knowledge acquisition, and creativity. It emphasizes social responsibility and investment in organizations dealing with complex performance standards, including non-financial environmental management and social domain challenges (Stanciu et al., 2014). However, sustainability is multifaceted and complex, encompassing a wide range of factors such as environmental sustainability, consumption of energy, customer satisfaction, and financial outcomes (Sebhatu, 2009). According to Buyukozkan and Karabulut (2018), sustainability performance is a combination of an organization's negative or positive social, environmental, and economic effects measured against predetermined criteria.

This study adopted the definition of sustainable performance as the "observable outcomes of corporate and managerial actions relating to the firm's relationships with its external environment" (Wood, 1991, 693).

2.3 Business Intelligence (BI)

Due to emerging technology, the business intelligence (BI) market is developing, necessitating organizations to adapt their products to consumer needs. BI systems facilitate the spread of knowledge and are critical for business decision-making processes. BI implementation, on the other hand, differs for each organization, demanding modifications of applications, architects, and enablers. User access, data quality, and interaction with other systems are critical for BI success (Heang & Mohan, 2017).

Luhn (1958) has developed business intelligence (BI), an autonomous system for disseminating information using data-processing computers. Cekuls (2022) mentioned that Business intelligence has

appeared since 1950s like a technology based on supporting decision, it is vital means in contemporary business organizations. In the same context, Taifi (2022) declared that the process of decision making is confirmed by business intelligence is imperative for gaining competitiveness and achieving strategic success.

According to Watson (2009), business intelligence (BI) is "a broad category of applications, technologies, and processes for gathering, storing, accessing, and analyzing data to help business users make better decisions". BI is a system comprising technological, human competencies, and business processes, focusing on information collection, storage, decision-making, and supporting specific business processes to enhance business values (Laursen & Thorlund, 2016). Furthermore, Negash and Gray (2008) defined Business intelligence as a system that integrates information from various systems using data warehouses, hardware and software capabilities, and internet technologies. Business Intelligence is the process of converting data into information and knowledge, providing insights for business managers to make tactical decisions (Niwash et al., 2022).

Business intelligence (BI) transforms data into strategic planning information, influenced by organizational, information system, and user perspectives on its usage and success (Awamleh & Bustami, 2023). Scheps (2008, 18) discussed business intelligence (BI) as a framework for improving practical and long-term operational effectiveness that has been made possible by advancements in computer power, storage of data, analytics, reports, and networking technology. In the same context, Howson (2013, 1) defined business intelligence (BI) as a set of tools and processes that enhances business operations, performance, and opportunities but overemphasizes creative thinking, culture, and data over technologies.

The current study adopted the definition of Business intelligence as a "contemporary term for data and software tools for organizing, analyzing, and providing access to data to help managers and other enterprise users make more informed decisions" (Howson, 2013, 49). Furthermore, Business intelligence tools like database querying, online analytical processing OLAP, and data mining help businesses analyze data, uncover patterns, and make informed decisions. They consist of data, infrastructure, analytic toolset, management users, and delivery platforms (Howson, 2013).

3. RESEARCH MODEL AND HYPOTHESIS DEVELOPMENT

3.1 Research Model

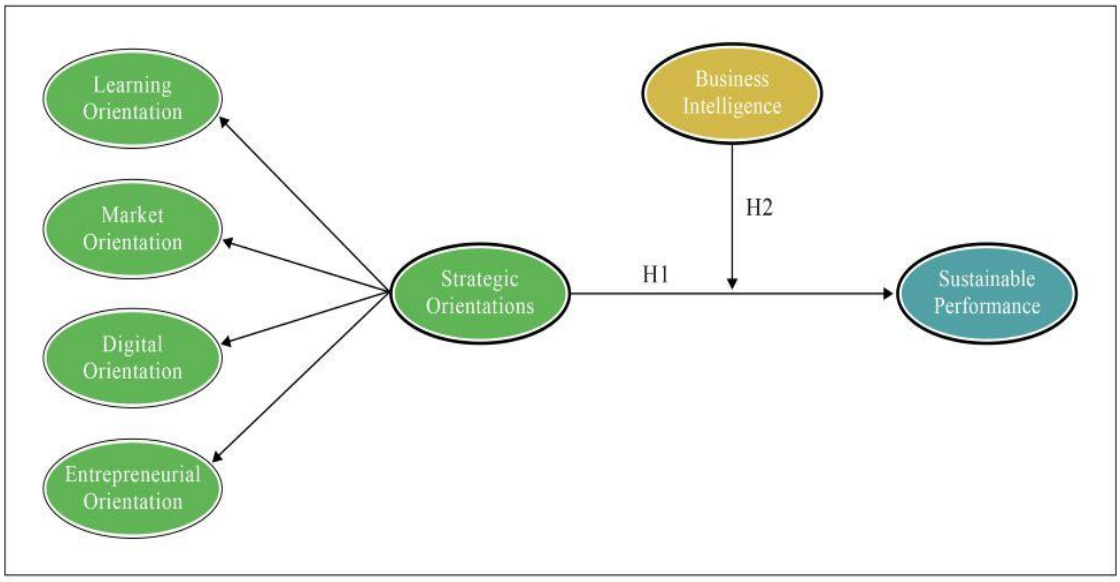

Figure 1. Research Model

3.2 Hypothesis Development

Several studies immediately addressed the noteworthy relationship between strategic orientations and sustainable performance. Strategic orientation is defined as the strategic actions carried out by the organization in order to create and enhance the business's operations for improved performance (Syahdan et al., 2020). Thus, in accordance with the RBV concept, strategic orientations are the fundamental resources and competencies to improve organizational performance.

Al- Humaidan et al. (2022) found that corporate social responsibility positively influences sustainability orientation in Tunisian small and medium enterprises. Habib et al. (2020) studied how knowledge management, market, and entrepreneurial orientations impact green supply chain management strategies and sustainable performance. Tseng et al. (2019) explored the impact of strategic orientations on environmental innovation capabilities and buyer value added in Taiwanese IT companies using marketing strategy and dynamic capacity philosophy. Furthermore, Khizar and Iqbal (2020) highlighted the importance of sustainability orientation for superior performance.

According to Ruiz-Ortega et al. (2023) sustainability orientation positively impacts social, environmental, and economic performance, while environmental hostility negatively affected these aspects. Menaouer et al. (2022) also revealed that knowledge management and business intelligence systems positively impact sustainable performance in the Algerian tourism industry. Cheng et al. (2023) investigated manufacturing organizations' sustainability performance as well as the impact of business intelligence and big data analytics, discovering that business intelligence plays an important role in evaluating big data analytics capabilities, with a beneficial impact on sustainability performance. Moreover, Business intelligence (BI) can enhance performance by detecting and responding to client demands, leading to increased sales and profits, but it requires human participation for analysis and improvement (Howson, 2013, 5- 6).

Muntean (2018) presented a multi-dimensional modeling approach for integrating business intelligence (BI) strategies into sustainable performance, emphasizing the importance of sustainability in business models and performance management systems. Menaouer et al. (2022) found a positive correlation between knowledge management processes and sustainable performance in the Algerian tourism industry and that business intelligence also positively impact sustainability performance. Vafaeinehad (2023) revealed that knowledge management enhances sustainable performance in Tehran stock exchange-listed companies, and modern financial technologies and business intelligence, like block chain, can aid in this process. In the same context, Petrini and Pozzebon (2009) explored the role of business intelligence systems in supporting sustainability management in organizations, focusing on the information planning phase and integrating socio-environmental indicators into sustainability strategies. Andriana et al. (2023) also examined the impact of business intelligence and absorptive capacity on firm performance in the manufacturing industry in Indonesia.

Accordingly, the following hypotheses follow:

H1. Strategic orientations have a significant positive impact on sustainable performance at Jordanian commercial banks.

H2. Business intelligence moderates the relationship between strategic orientations and sustainable performance at Jordanian commercial banks.

4. RESEARCH METHODS:

4.1. Methodology:

The proposed model was evaluated in the current study using a cross-sectional approach. Data has been collected from 12 banks. This study adopted a quantitative design that applied to the deductive approach.

This study relied on the quantitative approach due to its suitability to the study's nature and objectives. It also refers to an attempt to reach accurate knowledge of the elements of the phenomenon by collecting the necessary data related to the phenomenon under research from a group of members of the study population. The study variables were formed by strategic orientations as an independent variable, sustainable performance as a dependent variable, and business intelligence as a moderating variable. Then, this study analyzes the responses of the sample members from the top and middle management levels Jordanian commercial banks based on the study questionnaire to test its hypotheses and answer its questions to reach the results of the study (Saunders et al., 2023, 166; Sekaran & Bougie, 2016, 97).

4.2. Population and Sample:

The study's population consisted of all employees in the top and middle management of Jordanian commercial banks in their main departments in the capital, Amman. There are (12) commercial banks. The study adopted the equal stratified random sampling method; in order to represent all Jordanian commercial banks in the study sample. The number of employees in these banks at the top and middle management levels reached 750 managers. According to Sekaran and Bougie (2016, 295), the study sample consisted of 254 employees. The researcher distributed 264 questionnaires to ensure a greater representation of the study population. Twenty-two questionnaires were distributed for each bank and 224 questionnaires were retrieved. Four of them are not suitable for analysis, so the total number of questionnaires valid for the purposes of data analysis is 218.

4.3 Measures

The questionnaire was utilized in the current investigation to gather primary data. Because the questionnaire can be used with a variety of analysis tools, it has thirty items on a five-point Likert scale. Strategic orientations, the independent variable, were measured using items based on Gatignon and Xuereb (1997), Kindermann et al. (2021), Hakala (2011), Slater et al. (2006), Tseng et al. (2019), Al-Humaidan et al. (2022), Ashal et al. (2021), and Yu and Moon (2021). Sustainable performance, the dependent variable, was constructed using items adapted from Al-Humaidan et al. (2022), Nawi et al. (2020), and Habib et al., (2020). Finally, Heang and Mohan (2017), Husejinovic etal. (2022), and Niwash et al., (2022) designed items to measure the moderating variable (business intelligence).

4.4 Analysis Tool

The study utilized the Statistical Package for Social Sciences (SPSS) program for statistical analysis and testing. Descriptive statistics were used to describe demographic sample members' characteristics and agreement with questionnaire items. The arithmetic mean and standard deviation were used to measure average answers and deviations. Analytical statistics were used to analyze the data, including standard multiple regression analysis, hierarchical multiple regression analysis, the Pearson correlation coefficient, and the autocorrelation test.

5. RESULTS

5.1. Descriptive Statistics

Table 1. Descriptive statistics

Construct	Mean	Standard Deviation	Skewness	Kurtosis
Strategic orientations	4.276	.3199	.423	-.720
Sustainable performance	4.197	.3108	.731	.700
Business intelligence	4.404	.3109	.392	-.895

The results shown in Table 1 indicate that the level of relative importance of strategic orientations at Jordanian commercial banks in general was high. The overall arithmetic mean for strategic orientations reached (4.276), with a standard deviation of (0.3199), while the dependent variable (sustainable performance) was of high relative importance, as the arithmetic mean reached (4.197), with a standard deviation of (0.3108), while the moderating variable (Business Intelligence) had a high relative importance, as the arithmetic mean reached (4.404), and a standard deviation reached (0.319). The high level of relative importance of the studied variables indicates the interest of Jordanian commercial banks in those variables and the extent of the interest of the studied banks in strategic orientations and the trend towards sustainability in performance and adopting business intelligence, especially in light of an environment described by complexity and high competition and surrounded by many challenges. Table 1 also shows that the normal distribution of the studied variables was within the limits of normal proportions, as the rate of Kurtosis was from +2 to -2 and Skewness was low (+1.0) (Hair et al., 2022).

5.2. Measurement Model Evaluation

Multicolinearity test:

The Pearson correlation matrix was used to detect the problem of multiple linear correlations between the sub-dimensions of the independent variable and the moderating variable.

Table 2. Correlations

Construct	LO	MO	SO3	SO4	BI
LO	1				
MO	.732**	1			
DO	.451**	.574**	1		
EO	.601**	.629**	.505**	1	
BI	.329**	.440**	.442**	.404**	1

Note: LO = learning orientation, MO = market orientation, DO = digital orientation, EO = entrepreneurial orientation, BI = business intelligence. **. Correlation is significant (less than 0.80).

Table 2 shows the correlation matrix for the dimensions of the independent variable (strategic orientations) and the moderating variable (business Intelligence), where the correlation coefficient values between those dimensions were all significant values. Statistically, this indicates the absence of the phenomenon of multi-Collinearity, as the value of all correlation coefficients is less than (0.80), which is considered an indication that the sample is free of the problem of high multi- Collinearity (Montgomery et al., 2012, 118). The study found a high correlation coefficient (0.732) between learning orientation and market orientation, indicating the absence of multiple linear correlations. This value is less than 0.80, which indicates high Multicolinearity. To confirm this, the variance inflation factor was calculated for each independent variable to ensure multiple linear correlations.

Table 3. Results of the multiple correlations

Construct	VIF	Tolerance
Learning orientations	2.320	.431
Market orientations	2.738	.365
Digital orientations	1.571	.637
Entrepreneurial orientations	1.871	.535

Table 3 shows that the variance inflation factor (VIF) values were all greater than 1 and less than 10, and the value of tolerance was limited between 0.1 and 1, which indicates that there is no problem of multiple linear correlation between the study variables (Sekaran & Bougie, 2016, 351).

5.*3.* Reliability:

The reliability coefficient demonstrates the questionnaire items' internal consistency as well as their stability in assessing the characteristics for which they were developed. The study tool's reliability was confirmed based on the study variables and the responses of the surveyed participants regarding the study variables represented by strategic orientations, sustainable performance, and business intelligence by calculating the Cronbach Alpha Coefficient.

Table 4. Reliability

Construct	**Cronbach's Alpha ">0.70 and <0.95"**
Learning orientations	0.810
Market orientations	0.731
Digital orientations	0.795
Entrepreneurial orientations	0.822
Sustainable performance	0.899
Sustainable performance	0.730
Business intelligence	0.703

Table 4 shows the internal consistency coefficient values for the study items, ranging from.866 for strategic awareness to.946 for crisis management. All alpha values exceed the minimum acceptable percentage for statistical analysis, indicating consistency between the study tool paragraphs and reliability. A reliability coefficient value less than 0.60 is considered weak, while a value within 0.70 is acceptable, and a percentage exceeding 0.80 is considered good. Therefore, the study tool's consistency coefficients are considered valid indicators for statistical analysis (Sekaran & Bougie, 2016, 184).

6. HYPOTHESIS TESTING:

In this section of the study, hypotheses were examined, and the first primary hypothesis was examined utilizing standard multiple linear regression. The second primary hypothesis was tested through hierarchical regression.

6.1. Analysis of the first main hypothesis:

To analyze the first main alternative hypothesis, the study utilized the standard multiple regression as follows:

H1. ***Strategic orientations have a significant positive impact on sustainable performance at Jordanian commercial banks.***

Table 5. Model summary

Dependent Variable	Model Summary			ANOVA		
	R	R^2	Adjusted R^2	DF	F Calculated	Sig. F
Sustainable Performance	.666[a]	.444	.433	4	42.447	.000*

Note: * significant at ($\alpha \leq 0.05$)

Table 6. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.243	.257		4.845	.000		
	LO	-.030	.052	-.045	-.575	.566	.431	2.320
	MO	.146	.064	.195	2.301	.022	.365	2.738
	DO	.218	.072	.193	3.015	.003	.637	1.571
	EO	.357	.059	.424	6.070	.000	.535	1.871

a. Dependent Variable: Sustainable Performance

Note: LO = learning orientation, MO = market orientation, DO = digital orientation, EO = entrepreneurial orientation.

The results of table 5 explore that the correlation coefficient (R = 0.666) indicates a positive relationship between strategic orientations and sustainable performance, and the impact of strategic orientations on sustainable performance is statistically significant, as the value of the calculated F is 42.447, with a significance level (Sig = 0.000), which is less than 0.05. It also appears that the value of R^2 = (0.444), which indicates that 44.4% of the variance in sustainable performance can be explained through variance in dimensions of strategic orientations.

As for the coefficients table 6, it showed that the value of beta for learning orientation reached (-.045) and that the value of t was (-.575), with a significance level (Sig = 0.566), which indicates that this dimension is not significant. The value of beta for the dimension (market orientation) reached (0.195), and the value of t for it was (2.301), with a significance level (Sig = 0.022), which indicates that this dimension is significant. The value of beta for the (digital orientation) dimension was (0.193) and the value of t for it was (3.015), at a level of significance (Sig = 0.003), which indicates that this dimension is significant. The value of beta for the (entrepreneurial orientation) dimension was (0.424), and the value of t for it was (6.070), with a significance level (Sig = 0.000), which indicates that this dimension is significant.

Based on the above, the study's results support the first main alternative hypothesis that says: "*Strategic orientations have a significant positive impact on sustainable performance at Jordanian commercial banks*".

6.2. Analysis of the second main hypothesis:

To analyze the second main alternative hypothesis, the study utilized the hierarchical multiple regression as follows:

H2. Business intelligence moderates the relationship between strategic orientations and sustainable performance at Jordanian commercial banks.

Table 7. Model summary

Model	R	R Square	Adjusted R Square	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
1	.666[a]	.444	.433	.444	42.447	4	213	.000 *
2	.673[b]	.453	.440	.009	3.531	5	212	.000 *

Note: * significant at ($\alpha \leq 0.05$).

Table 8. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.243	.257		4.845	.000		
	LO	-.030	.052	-.045	-.575	.566	.431	2.320
	MO	.146	.064	.195	2.301	.022	.365	2.738
	DO	.218	.072	.193	3.015	.003	.637	1.571
	EO	.357	.059	.424	6.070	.000	.535	1.871
2	(Constant)	1.019	.282		3.615	.000		
	LO	-.026	.051	-.039	-.506	.613	.430	2.323
	MO	.127	.064	.169	1.984	.049	.356	2.810
	DO	.187	.074	.165	2.529	.012	.604	1.655
	EO	.342	.059	.406	5.791	.000	.524	1.907
	BI	.111	.059	.111	1.879	.042	.739	1.353

a. Dependent Variable: sustainable performance

Note: LO = learning orientation, MO = market orientation, DO = digital orientation, EO = entrepreneurial orientation, BI= business intelligence

Table 7 displays the results of the hierarchical multiple regression analysis based on two models. The results of the first model based on the first step reflected the presence of a statistically significant impact of strategic orientations on sustainable performance, as the value of (F) reached (F = 42.447) and at a significance level (sig. = 0.000), which is less than 0.05. The value of the coefficient of determination was (R^2 = 0.444), and this indicates that strategic orientations explain (44.4%) of the variance in the dependent variable (sustainable performance), and the rest is attributable to other factors.

In the second step, the moderating variable (business intelligence) was entered into the regression model, where the value of the coefficient of determination R^2 increased by (0.9%) to become (R^2 = 0.453), and this percentage was statistically significant, as the value was (FΔ=3.531) and with a significance level of (Δ Sig F. = 0.000), which is less than (.05). The value of (β = 0.111) for the business intelligence variable was (t = 1.879) with a significance level of (sig. = 0.042), which is less than (.05). This confirms the significant impact of business intelligence in improving the impact of strategic orientations on sustainable performance at Jordanian commercial banks, as the variance percentage improved by (0.9%), rising from (44.4%) to (45.3%).

The results of the coefficients table no. 8 for the second model also indicated that the value of beta for learning orientation reached (-.039) and that the value of t was (-.506), with a significance level (Sig = 0.613), which indicates that the effect of this dimension is not significant. The value of beta for the dimension (market orientation) reached (0.169), and the value of t for it was (1.984), with a significance level (Sig = 0.049), which indicates that this dimension is significant. The value of beta for the (digital orientation) dimension was (0.165) and the value of t for it was (2.529), at a level of significance (Sig = 0.012), which indicates that this dimension is significant. The value of beta for the (entrepreneurial orientation) dimension was (0.406), and the value of t for it was (5.791), with a significance level (Sig = 0.000), which indicates that this dimension is significant. It was also found that the beta value of the modified variable (knowledge sharing) reached (0.111) and the T value reached (1.879) at a significance level of (0.042), which indicates that this dimension is significant.

Based on the above, the study's results support the second main alternative hypothesis that says: "*Business intelligence*

moderates the relationship between strategic orientations and sustainable performance at Jordanian commercial banks".

7. CONCLUSION AND DISCUSSION:

This research examines the moderating role of business intelligence between strategic orientations and sustainable performance at Jordanian commercial banks. Actually, not many research papers explore this relation at banks. According to the findings, strategic orientations have a significant impact on sustainable performance, confirming H1. Many studies have shown a positive relationship between strategic orientations and sustainable performance (Nawi et al., 2020; Appiah-Nimo & Chovancova`, 2020; Cuevas- Vargas et al., 2022; Yu & Moon, 2021; Habib et al., 2020; and Dionysus & Arifin, 2020).

This result consistent with Khizar and Iqbal (2020), who explored the impact of strategic orientation (market orientation, and entrepreneurial orientation) on SMEs' innovation success and sustainable competitive advantage, emphasizing the importance of sustainability orientation for superior performance. In the same context, Van Lieshout et al. (2021) revealed that strategic orientations achieve better performance, while ambidexterity and open innovation promote innovation. Furthermore, the study's result echoes with Ingram et al. (2022), who analyzed the relationship between entrepreneurial orientation and sustainable firm performance in Polish businesses, revealing proactiveness as a key factor in achieving sustainable performance.

The main second hypothesis explored the moderating role of business intelligence on improving the impact of strategic orientations on sustainable performance at Jordanian commercial banks. The results confirm H2; accord with Cheng et al. (2023) who investigated manufacturing organizations' sustainability performance as well as the impact of business intelligence and big data analytics, discovering that business intelligence plays an important role in evaluating big data analytics capabilities, with a beneficial impact on sustainability performance. Moreover, it consistent with Muntean (2018) who explored a multi-dimensional modeling approach for integrating business intelligence (BI) strategies into sustainable performance, emphasizing the importance of sustainability in business models and performance management systems. It also accords with Menaouer et al. (2022) who revealed a positive correlation between knowledge management processes and sustainable performance in the Algerian tourism industry and that business intelligence also positively impact sustainability performance.

The results of the main second hypothesis consistent with Vafaeinehad (2023), who revealed that knowledge management enhances sustainable performance in Tehran stock exchange-listed companies, and modern financial technologies and business intelligence, like block chain, can aid in this process. In the same context, Petrini and Pozzebon (2009) explored the role of business intelligence systems in supporting sustainability management in organizations. Finally, the results accords with Andriana et al. (2023), who also examined the impact of business intelligence and absorptive capacity on firm performance at the manufacturing industry in Indonesia.

8. LIMITATIONS:

The current study encountered many limitations, which are represented by three main limitations. The sample size is relatively small and the population studied was limited to Jordanian commercial banks, which may limit the generalizability of the results. This study also used a questionnaire to collect primary data, and it is possible to adopt other methods such as interview, observation, and case study. In addition, the study encountered a lack of studies linking the relationship between the three variables investigated. Accordingly, the study recommends that future researchers to move towards studying other variables as a moderating variable, such as organizational ambidexterity, visionary leadership, and strategic intelligence in other sectors.

REFERENCES

Abbade, E. B., de Vargas Mores, G., & Spanhol, C. P. (2014). The impact of

entrepreneurial orientation on sustainable performance: Evidence of MSMES from Rio Grande do Sul. *Revista de Gestão Social e Ambiental*, 8(2), 49-62.

Al-Humaidan, Abdulaziz-, Ahmad, N. & Islam, M. S. (2022). Investigating the mediating relationship between sustainability orientations and sustainable performance in the SME context of Tunisia. *Vision*, 26(3), 369-381.

Alkhawaldeh, A. E., & Shawabkeh, K. M. A. (2023). The impact of strategic orientations on supply chain performance: The mediating role of organizational ambidexterity at Jordanian Extractive and Mining Companies. *International Journal of Academic Research in Business and Social Sciences*, 13(6), 1991 – 2015.

Aloulou, W. J. (2019). Impacts of strategic orientations on new product development and firm performances: Insights from Saudi industrial firms. *European Journal of Innovation Management*, 22(2), 257-280.

Aloulou, W., & Fayolle, A. (2005). A conceptual approach of entrepreneurial orientation within small business context. *Journal of enterprising culture*, 13(01), 21-45.

Andriana, M., Mursitama, T. N., Arnakim, L. Y., & Noerlina, N. (2023). *Business Intelligence and Absorptive Capacity Impact on Firm Performance in Manufacturing Companies: A Systematic Literature Review*. In E3S Web of Conferences (426, 02057). EDP Sciences.

Appiah-Nimo, C., & Chovancová, M. (2020). *Improving firm sustainable performance: the role of market orientation*. In Proceedings of the International Conference on Business Excellence (14, 1, 780-787).

Arnetzitha, D. R. (2023). A model for the business intelligence system acceptance in the south African banking sector. *Journal of Theoretical and Applied Information Technology*, 101(8).

Ashal, N., Alshurideh, M., Obeidat, B., & Masa'deh, R. (2021). The impact of strategic orientation on organizational performance: Examining the mediating role of learning culture in Jordanian telecommunication companies. *Academy of Strategic Management Journal*, 21, 1-29.

Awamleh, Fawwaz Tawfiq & Bustami, Ala Nihad (2023). Investigate the mediating role of business intelligence on the relationship between critical success factors for business intelligence and strategic intelligence. *Journal of Intelligence Studies in Business*, 12(2), 66-79

Azaj, E., Ayele, M. B., & Mekonnen, W. (2020). Effect of strategic orientations on organizational performance: evidence from top management of a private bank in Ethiopia. *International Journal on Leadership*, 8(1).

Bendig, D., Schulz, C., Theis, L., & Raff, S. (2023). Digital orientation and environmental performance in times of technological change. *Technological Forecasting and Social Change*, 188, 122272.

Büyüközkan, G., & Karabulut, Y. (2018). Sustainability performance evaluation: Literature review and future directions. *Journal of environmental management*, 217, 253-267.

Calantone, R. J., Cavusgil, S. T., & Zhao, Y. (2002). Learning orientation, firm innovation capability, and firm performance. *Industrial marketing management*, 31(6), 515-524.

Cekuls, A. (2022). Business intelligence factors for decision making. *Journal of Intelligence Studies in Business*, 12(2), 4-5.

Cheng, J., Singh, H. S. M., Zhang, Y. C., & Wang, S. Y. (2023). The impact of business intelligence, big data analytics capability, and green knowledge management on sustainability performance. *Journal of Cleaner Production*, 429, 139410.

Cooper, R. G. (1994). New products: the factors that drive success. International marketing review, 11(1), 60-76.

Cuevas-Vargas, H., del Rocío Esparza-Durón, M., & González-Acolt, R.

(2022). Sustainable marketing orientation and sustainability performance of Mexican small firms. The moderating role of firm age. *Procedia Computer Science*, 214, 376-383.

David, F. R. (2011). *Strategic Management Concepts and Cases*. Pearson.

Day, G. S. 1994. The capabilities of market-driven organizations. *Journal of Marketing*, 58(1), 37–52.

Dionysus, R., & Arifin, A. Z. (2020). Strategic orientation on performance: The resource based view theory approach. *Jurnal Akuntansi*, 24(1), 136-153.

Elkington, J. (1998). Accounting for the triple bottom line. *Measuring business excellence*, 2(3), 18-22.

Gatignon, H., & Xuereb, J. M. (1997). Strategic orientation of the firm and new product performance. *Journal of Marketing Research*, 34, 77-90.

Habib, M. A., Bao, Y., & Ilmudeen, A. (2020). The impact of green entrepreneurial orientation, market orientation and green supply chain management practices on sustainable firm performance. *Cogent Business & Management*, 7(1), 1743616.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2022). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R*. Springer. https://doi.org/10.1007/978-3-030-80519-7

Hakala, H. (2011). Strategic orientations in management literature: Three approaches to understanding the interaction between market, technology, entrepreneurial and learning orientations. *International Journal of Management Reviews*, 13(2), 199-217.

Heang, R. & Mohan, R. (2017). Literature review of business intelligence, *J. Business, Eng. Sci*, 2(1), 1-10.

Helfat, C. E., & Peteraf, M. A. (2015). Managerial cognitive capabilities and the microfoundations of dynamic capabilities. *Strategic management journal*, 36(6), 831-850.

Howson, C. (2013). *Successful business intelligence: Unlock the value of BI & big data*. McGraw-Hill Education Group.

Huikkola, T., & Kohtamäki, M. (2019). Interplay of strategic orientations in the development of smart solutions. *Procedia CIRP*, 83, 89-94.

Husejinovic, A., Durmić, N., & Jukić, S. (2022). Application of Business Intelligence in Decision Making for Credit Card Approval. *Journal of Intelligence Studies in Business*, 12(2), 54-64.

Ingram, T., Bratnicka-Myśliwiec, K., Kraśnicka, T., & Steinerowska-Streb, I. (2022). Entrepreneurial orientation as a determinant of sustainable performance in Polish family and non-family organizations. *Sustainability*, 14(24), 16393.

Keeble, J. J., Topiol, S., & Berkeley, S. (2003). Using indicators to measure sustainability performance at a corporate and project level. *Journal of Business Ethics*, 44, 149-158.

Khizar, H. M. U., & Iqbal, M. J. (2020). Linking sustainability orientation in SMEs strategic approach for sustainable firm performance: An integrative framework. *Paradigms*, (S1), 165-170.

Kindermann, B., Beutel, S., de Lomana, G. G., Strese, S., Bendig, D., & Brettel, M. (2021). Digital orientation: Conceptualization and operationalization of a new strategic orientation. *European Management Journal*, 39(5), 645-657.

Laursen, G. H., & Thorlund, J. (2016). *Business analytics for managers: Taking business intelligence beyond reporting*. John Wiley & Sons.

Luhn, H. P. (1958). A business intelligence system. *IBM Journal of research and development*, 2(4), 314-319.

Mankgele, K. P., & Fatoki, O. (2020). Strategic Orientation and Performance of Small Businesses in South Africa. *Journal of Reviews on Global Economics*, 9(1), 459-467.

Menaouer, B., Mohammed, S., & Nada, M. (2022). The Impact of Business Intelligence and Knowledge Management on Sustainability Performance in the Tourism Industry in Algeria. *Indonesian Journal of*

Sustainability Accounting and Management, 6(1), 168-187.

Montgomery, D. C., Peck, E. A., & Vining, G. G. (2012). *Introduction to linear regression analysis* (5th ed.), New York, NY: John Wiley & Sons.

Muntean, M. (2018). Business intelligence issues for sustainability projects. *Sustainability*, 10(2), 335.

Nair, A., & Nayar, S. K. (2020). *Key performance indicators of sustainability*. In IOP Conference Series: Earth and Environmental Science, 491 (1), 012047. IOP Publishing.

Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *Journal of marketing*, 54(4), 20-35.

Nawi, N. C., Al Mamun, A., Daud, R. R. R., & Nasir, N. A. M. (2020). Strategic orientations and absorptive capacity on economic and environmental sustainability: A study among the batik small and medium enterprises in Malaysia. *Sustainability*, 12(21), 8957.

Negash, S., & Gray, P. (2008). Business intelligence. *Handbook on decision support systems,* 2, 175-193.

Niwash, M. N. K., Cek, K., & Eyupoglu, S. Z. (2022). Intellectual capital and competitive advantage and the mediation effect of innovation quality and speed, and business intelligence. *Sustainability*, 14(6), 3497.

Noble, C. H., Sinha, R. K., & Kumar, A. (2002). Market orientation and alternative strategic orientations: A longitudinal assessment of performance implications. *Journal of Marketing*, 66(4), 25-39.

Obeidat, B. Y. (2016). The effect of strategic orientation on organizational performance: The mediating role of innovation. *International Journal of Communications, Network and System Sciences*, 9, 478-505. Retrieved from http://www.scirp.org/ journal/ijcns

Ogbari, M. E., Ibidunni, A. S., Ogunnaike, O. O., Olokundun, M. A., & Amaihian, A. B. (2018). A comparative analysis of small business strategic orientation: Implications for performance. *Academy of Strategic Management Journal*, 17(1), 1-15.

Petrini, M., & Pozzebon, M. (2009). Managing sustainability with the support of business intelligence: Integrating socio-environmental indicators and organisational context. *The journal of strategic information systems*, 18(4), 178-191.

Quinton, S., Canhoto, A., Molinillo, S., Pera, R., & Budhathoki, T. (2018). Conceptualising a digital orientation: antecedents of supporting SME performance in the digital economy. *Journal of Strategic Marketing*, 26(5), 427-439.

Ruiz-Ortega, M. J., Córcoles-Muñoz, M. M., Parra-Requena, G., & García-Villaverde, P. M. (2023). Sustainability orientation and sustainability performance in response to hostile environments in cultural tourism destinations. *International Journal of Tourism Cities*, 9(4), 974-994.

Rupeika-Apoga, R., Petrovska, K., & Bule, L. (2022). The effect of digital orientation and digital capability on digital transformation of SMEs during the COVID-19 pandemic. *Journal of Theoretical and Applied Electronic Commerce Research*, 17(2), 669-685.

Saunders, M., Lewis, P., & Thornhill, A. (2023). *Research Methods for Business Students* (9thed). Pearson education.

Scheps, S. (2008). *Business intelligence for dummies*. John Wiley & Sons.

Sebhatu, S. P. (2009). *Sustainability Performance Measurement for sustainable organizations: beyond compliance and reporting*. Service Research Centre Karlstad University, Karlstad.

Sekaran U., & Bougie, R. (2016). *Research methods for business: A Skill building approach* (7th ed.). John Wiley and Sons.

Senge, P. M. (1990). *The Fifth Discipline: The Art & Practice of The Learning Organization*, Doubleday, Inc.

Slater, S. F., & Narver, J. C. (1994). Does competitive environment moderate the market orientation-performance

relationship? *Journal of marketing*, 58(1), 46-55.

Slater, S. F., Olson, E. M., & Hult, G. T. M. (2006). The moderating influence of strategic orientation on the strategy formation capability–performance relationship. *Strategic management journal*, 27(12), 1221-1231.

Stanciu, A. C., Constandache, M., & Condrea, E. (2014). Concerns about the sustainable performance of firm in the context of quality management systems implementation. *Procedia-Social and Behavioral Sciences*, 131, 340-344.

Syahdan, R., Djaelani, Y., & Mahdi, S. (2020). Strategic orientation and the performance of SMEs in Indonesia: The mediating role of access to finance. *Management Science Letters*, 10(5), 1151-1160.

Taifi, N. (2022). The primordial role of Business Intelligence and Real Time Analysis for Big Data: Finance-based case study. *Journal of Intelligence Studies in Business*, 12(2).

Tho, N. D. (2019). Strategic orientations and firm innovativeness: a necessary condition analysis. *Baltic Journal of Management*, 14(3), 427-442.

Tseng, C. H., Chang, K. H., & Chen, H. W. (2019). Strategic orientation, environmental innovation capability, and environmental sustainability performance: The case of Taiwanese suppliers. *Sustainability*, 11(4), 1127.

Uzoamaka, N. O. P., Ifeoma, A. R., & Nosike, C. J. (2020). Strategic orientation dimensions: a critical review. *Int J Res Innov Soc Sci*, 4(9), 609-612.

Vafaeinehad, M. (2023). Studying the mediating role of new financial technologies and business intelligence in the relationship between knowledge management and sustainable performance. *Romanian Journal of Information Technology and Automatic Contro*l, 33(3), 55-70.

Van Lieshout, J. W., Nijhof, A. H., Naarding, G. J., & Blomme, R. J. (2021). Connecting strategic orientation, innovation strategy, and corporate sustainability: A model for sustainable development through stakeholder engagement. *Business Strategy and the Environment*, 30(8), 4068-4080.

Venkatraman, N. (1989). Strategic orientation of business enterprises: The construct, dimensionality, and measurement. *Management science*, 35(8), 942-962.

Watson, H. J. (2009). Tutorial: business intelligence–past, present, and future. *Communications of the Association for Information systems*, 25(1), 39.

Weinzimmer, L. G., Robin, J., & Michael, Eric. J. (2012). The measurement of strategic orientation and its efficacy in predicting financial performance. *Journal of Business Strategies*, 29(2), 81-99.

Wheelen, T. L., Hunger, J. D., Hoffman, A. N., & Bamford, C. E. (2018). *Strategic Management and Business Policy: Globalization, Innovation, and Sustainability*. pearson.

Wood, D. J. (1991). Corporate social performance revisited. *Academy of Management Review*, 16(4), 691–718. https://doi.org/10.5465/amr.

Wood, V. R., & Robertson, K. R. (1997). Strategic orientation and export success: an empirical study. *International Marketing Review*, 14(6), 424-444. http://dx.doi.org/10.1108/02651339710192975

Yu, J., & Moon, T. (2021). Impact of digital strategic orientation on organizational performance through digital competence. *Sustainability*, 13(17), 9766.

Zhai, Y. M., Sun, W. Q., Tsai, S. B., Wang, Z., Zhao, Y., & Chen, Q. (2018). An empirical study on entrepreneurial orientation, absorptive capacity, and SMEs' innovation performance: A sustainable perspective. *Sustainability*, 10(2), 314.

Zheng, X. (2024). The Impact of Digital Orientation on New Product Development Performance: Does Knowledge Intensity Matter? *Sustainability*, 16(8), 3420.

Zhou, K. Z., Yim, C. K., & Tse, D. K. (2005). The effects of strategic orientations on

technology-and market-based breakthrough innovations. *Journal of Marketing*, 69(2), 42–60. https://doi.org/10.1509/jmkg.69.2.42.60756.

Journal of Intelligence Studies in Business Vol. 14 No. 1 (2024) pp. 31–41
Open Access: Freely available at: http://jisib.com/

The Mediating effect of Business Intelligence Systems on the relationship between Supply Chain Management and Customer Relationship Management

Emad Ali kasasbeh*
Tariq Barjes Al-bloush,
Amr alshauaura
National University College of Technology, Amman, Jordan
emad_kasasbh@yahoo.com

Ahmad Salih Mheidi Alnaser
Sally Karim Shawawrah
Amman Arab University, Amman, Jordan
emad_kasasbh@yahoo.com

Received 25 April 2024; received in revised form 12 May 2024; accepted 13 June 2024

ABSTRACT The purpose of this study is to investigate the impact of the effect of Supply Chain Management in Customer Relationship Management: The mediating role of Business Intelligence Systems. Data was collected using a survey method, the survey targeted professionals in the field of supply chain management and Business Intelligence Systems. Whereby a total of 300 questionnaires were distributed to the study sample, (270 useable questionnaires returned). Structural model assessment was conducted to test the relationships among Supply Chain Management, Business Intelligence Systems, Customer Relationship Management the results show a positive relationship between Supply Chain Management dimensions and Customer Relationship Management. Moreover, Business Intelligence Systems play a mediating role in the relationship between Supply Chain Management and the Customer Relationship Management.

KEYWORDS: Supply Chain Management, Customer Relationship Management, Business Intelligence Systems

1. INTRODUCTION

In a time of digital revolution, where ever-improving technology is changing our lives on a daily basis, the importance of data use cannot be emphasized. The increasing amounts of data being produced demand skilled management and examination in order to derive significant understanding (Namvar et al., 2016). As a result, businesses are faced with managing enormous datasets throughout their whole operations. As a result, they look for software programs and knowledgeable employees that can use various data sources to help with well-informed decision-making. Presently, Business Intelligence (BI), an idea designed to facilitate the gathering, processing, and application of data. According to Watson and Wixom (2007), BI becomes a crucial enabler that improves organizational value and performance. According to Namvar et al. (2016), business intelligence (BI) is the process of providing management with the means to extract meaningful business data, which in turn enables management to make well-informed decisions. BI, which is frequently used as a "umbrella" phrase,

* *Corresponding author*

encompasses a number of data analysis aspects, including big data, business analytics, data warehousing, and data mining (Trieu, 2017). Showcase BI as a complex system that combines elements of technology, process, and/or product.

Supply chain management, or SCM, is a fundamental component of all business sectors, from startups to large conglomerates. SCM is essentially about coordinating people, resources, and procedures to maximize value delivery from suppliers to consumers while keeping costs to a minimum. Supply chain management (SCM) is the process of delivering goods or services from suppliers to end users through a network of individuals, organizations, information, and resources (Kaina & Verma, 2018). Many stakeholders from different departments are included in this network, which guarantees the smooth integration of logistics management, transformation, and procurement processes (Ellram et al., 2019).

SCM is a cooperative effort that, in order to improve long-term performance, requires cooperation across many businesses and business processes. By combining marketing, sales, R&D, production, procurement, logistics, IT, finance, and customer support, SCM goes beyond conventional corporate operations. SCM operates as a pipeline, optimizing the flows of information, financial resources, goods, and services to maximize customer value and satisfaction—a critical component of profitability and competitive advantage. Specifically, SCM prioritizes efficiency and meets the expectations of customers at every level of the organization (Martins & Pato, 2019; Chopra & Meindl, 2013).

Differentiating SCM from traditional logistics, the former involves an interconnected network of different parties that work together to deliver items to market, while the latter is more concerned with internal operations within a company. While SCM expands the scope of logistics by promoting connections and coordination between suppliers, consumers, and the organization itself, logistics mostly focuses on organizing product and information flows within a firm Thus, SCM embraces interdepartmental cooperation throughout operations, going beyond simple logistical activities Mukhamedjanova, 2020).

Simultaneously, client Relationship Management (CRM) presents itself as a comprehensive approach intended to recognize, procure, oversee, and cultivate promising client connections. CRM strengthens long-term relationships with customers by utilizing information technology, which increases customer satisfaction and retention. CRM plays a crucial role in adjusting to changing customer expectations in a time of more customization and personalized service, which promotes sustainability and loyalty. The Gil-Gomez group (2020). The incorporation of CRM into supply chain management and decision-making procedures results in significant advantages that improve customer satisfaction and organizational effectiveness CRM is even more important in the value chain because of its emphasis on sustainable business model innovation and digital focus, which are in line with modern green IT concepts (Guerola-Navarro et al., 2021; Chatterjee et al., 2022).

Given these interrelated domains of business intelligence, supply chain management, and customer relationship management, the mediating role of business intelligence systems on the interaction between these two critical functions becomes apparent and calls for more investigation and research. In order to better understand the complex interactions between these domains and the transformative potential of business intelligence (BI) in enhancing SCM-CRM dynamics for organizational performance in the digital age, this study aims to delve into this nexus.

2. LITERATURE REVIEW

2.1. Theoretical framework

Business Intelligence (BI) systems have become indispensable tools across various enterprises, particularly within logistics operations. These systems facilitate a myriad of analyses, making them particularly valuable in dynamic supply chain environments where swift decision-making is paramount. Accuracy in data extraction and analysis is crucial for informed decision-

making, especially amidst rapidly changing scenarios (Tan, Leeb Goh, 2012). BI systems play a pivotal role in mitigating costs associated with reverse logistics, which involves managing the flow of products designated for remanufacturing, recycling, or disposal. By efficiently handling product returns due to factors like seasonality, quality issues, expiration, or transit damage, enterprises can elevate customer service and retention levels (Senthil, Srirangacharyulu, Ramesh, 2012).

In the realm of supply chain management, BI offers numerous benefits, including cost-effective transportation, streamlined logistics operations, enhanced customer service through route optimization, thorough analysis of transport operations, cargo load optimization, and efficient inventory and order management (Vatovec Krmac, 2011). Moreover, BI empowers decision-makers by providing insights into market trends and their impact on business operations, facilitated through dashboards and scoreboards that highlight key performance indicators (KPIs) and operational exceptions. Sahay emphasizes the critical role of BI in enhancing the effectiveness and efficiency of supply chain analytics, thereby bolstering a company's competitive edge (Sahay, 2013). One significant application of BI in logistics lies in the optimization of transportation and distribution activities, leading to reduced distribution costs and the identification of optimal solutions for complex optimization problems through advanced data mining techniques (Olszak, Ziemba, 2012).

Furthermore, the integration of BI with Radio Frequency Identification (RFID) technology holds promise for optimizing supply chain operations. Baars et al. assert that RFID-based automatic identification systems are poised to drive substantial improvements in cost efficiency within transportation and warehousing processes (Baars et al., 2008). This synergy between BI and RFID technology opens avenues for heightened efficiency and cost savings across the logistics spectrum.

2.2 Empirical review

Olexova (2014) asserts that a company's ability to successfully integrate business intelligence (BI) increases managerial value and makes it easier to optimize business operations. Another notable case study by Presthus and Canales (2015) centers on the deployment of business intelligence dashboards at WWL Logistics Company, a significant operator in international shipping and logistics for different manufacturers. According to this report, WWL's Global Procurement department created seven Key Performance Indicators (KPIs) in 2012, each of which included a set of improvement objectives meant to improve operational procedures and strategic supplier relationships. Moreover, CF Industries, the second-largest nitrogen producer in the world, is the subject of another case study that demonstrates the use of BI in the supply chain environment. With the task of converting their antiquated systems to SAP in hand, CF Industries turned to Globonix's supply chain and logistics know-how. With the help of Globonix's BI solutions, CF Industries was able to carry out several system integrations at once, which led to significant cost savings and the prompt installation of an effective operational framework Globonix, (2018).

Additionally, Williams (2007) explains how a computer hard disk drive manufacturer used business intelligence (BI) to manage product lifecycles, improve customer relations, optimize inventory management, and streamline supply chains. The company's running costs were remarkably reduced by 50% as a result of this smart use of BI. When taken as a whole, these case studies demonstrate the broad range of applications that BI systems can have in the logistics industry and how well they work to improve overall business performance, cost savings, and operational efficiency.

Grabińska and Ziora (2019) want to demonstrate the useful application of business intelligence (BI) systems in the logistics sector, with a focus on how important they are for aiding in decision-making. They highlight the numerous benefits of business intelligence (BI) for logistics firms and emphasize how crucial it is for supporting decision-making in a variety of supply chain contexts.

Šerić, Rozga, and Luetić (2014) go into great detail to explain the relationship between supply chain management and business

intelligence, with a special emphasis on marketing decision-making. Their research finds a significant statistical relationship between supply chain management, information visibility, business intelligence, and partner integration in the production chain. A conceptual analysis of the supply chain's influence on business intelligence (BI) in privately held companies is provided by Langlois and Chauvel (2017). Trieu, V.-H. (2017). the purpose of the study is to determine which aspects of the BI business value process have already been investigated and which ones require further investigation. It also suggests particular research questions for the future. According to Soh and Markus's (1995) process, which consists of a series of necessary conditions ranging from BI investments to BI assets to BI impacts to organizational performance, the results indicate that organizations seem to derive value from BI systems. Nevertheless, the probabilistic processes that connect these necessary conditions have not received enough attention from researchers. Their study emphasizes how the supply chain creates a multitude of data points, from first suppliers to final consumers, and how important it is for businesses to carefully examine this data in order to maximize operational effectiveness.
Cheng, J et al., (2023). In light of the moderating role of green knowledge management, this research attempts to investigate the factors that influence sustainability performance in manufacturing organizations as well as the influence of business intelligence and big data analytics capabilities on performance. The findings showed that business intelligence is a key determinant of big data analytics competence, and sustainability performance is a benefit of big data analytics capability. Green knowledge management does not moderate the association between big data analytics capability and sustainability performance; instead, big data analytics capability mediates the positive relationship between business intelligence and sustainability performance.

By conducting a thorough examination of recent literature Tozin (2022) hopes to clarify the meanings of Supply Chain Management (SCM) and Business Intelligence (BI), as well as outline the benefits and challenges of integrating BI systems into SCM frameworks. From their research, they find that combining these two ideas can provide organizations with significant competitive advantages. The aforementioned benefits stem from the functionalities of business intelligence (BI) applications in supply chain management (SCM) contexts. These functionalities include the capacity to display real-time data via intuitive visualization tools, precise demand and production forecasting, distribution route and warehouse management optimization, execution of predictive analyses to minimize disruptions, and numerous other advantages.
The study conducted by Sengun et al., (2019) examined the relationship between supply chain competencies, innovativeness, and IT resources in relation to business performance. Their findings highlight the growing importance of IT resources and investments in the current, highly digitalized supply chain environment.

3. CONCEPTUAL FRAMEWORK

The conceptual framework (supply chain management, customer relationship management, and business intelligence systems) for the creation of hypotheses in this study can be explained in Figure 1 based on other studies.

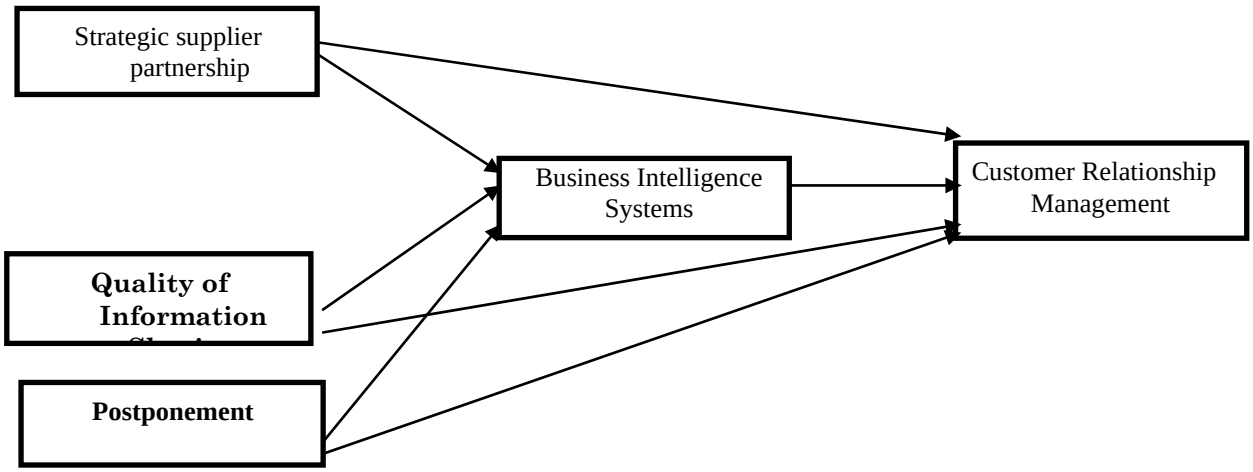

Figure 1. Conceptual Framework of Hypothesis Formation

H1. Strategic supplier partnership has a significant influence on Business Intelligence Systems.
H2. Strategic supplier partnership has a significant influence on Customer Relationship Management.
H3. Quality of Information Sharing has a significant influence on Business Intelligence Systems.
H4. Quality of Information Sharing has a significant influence on Customer Relationship Management.
H5. Postponement has a significant influence on Business Intelligence Systems.
H6. Postponement has a significant influence on Customer Relationship Management.
H7. Business Intelligence Systems has a significant influence on Customer Relationship Management.

4. METHODOLOGY

To put it briefly, the research design creates a broad framework for how the study will be conducted and how the research questions will be addressed. Quantitative research is the most effective way to explain the correlations between observable variables (Leedy & Ormrod, 2005). This study uses a cross-sectional survey method in conjunction with a quantitative approach since it is more acceptable to use quantitative methods when the conceptual model that is developed calls for a larger sample size to be investigated. The cross-sectional survey approach was selected due to its ability to collect more data at a lesser cost from a wider demographic. Moreover, there's a chance that the methodology used for the poll will yield results that are typical of the entire population. It was imperative to gather information.

The effect of supply chain management on customer relationship management: the mediating role of business intelligence systems is the aim of the current study. Additionally, to test the study hypotheses using a positivist-related quantitative technique. The study used a survey questionnaire to professionals who work on the networking site LinkedIn in the fields of supply chain management, logistics, and business intelligence systems. The study model and hypotheses that were suggested were tested using PLS statistical techniques. The study employed a cross-sectional approach to achieve its objectives.

The primary methods of data collecting for this study were a quantitative approach using a survey questionnaire as a research tool, with careful consideration given to the random sampling strategy applied to the target population. Relevant statistical analyses, including using SPSS, data normalcy and measures, and analysis PLS, were used in this study. With the aid of this program, the mediating analysis verifies the validity and the measurement model.

4.1 Research Population and Sample

In order to collect data in the Researchers distributed an online survey using the professional networking site LinkedIn. Professionals working in supply chain

management, logistics, and business intelligence systems were the target audience for the poll. Three hundred people finished the survey. A review of the participants' LinkedIn profiles showed a wide variety of experiences, with people having held a variety of positions and responsibilities over the course of their careers. Furthermore, the majority of participants (62) percent reported that their greatest educational achievement was a bachelor's degree. Moreover, the majority of the sample, 48.2% of participants, reported having five to ten years of job experience. Out of the 300 responders, men made up (59.2%) of the participants, while women made up (40.8%). In addition, (64.0%) of the respondents belonged to the (32–37) age range.

5. DATA ANALYSIS METHOD

Because the data were not normally distributed, partial least squares structural equation modeling (PLS-SEM, 3.1) was used in this study to test the research model. Path models with latent constructs are assessed using PLS-SEM, a multivariate analysis method (Hair et al., 2019). The path effect from exogenous construct to endogenous construct is described by the effect size f2, which is used in model estimation (Hair et al., 2019).

5.1 Results and Discussion

Measurement model assessment

Assess the instrument's quality for this study using Smart PLS. The validity test includes a measurement of the instrument's quality. A validity examination of the questions is necessary as prior research has shown that all indicators are suitable for use as research tools. An indication is deemed valid if the significance value of each question item is less than 0.05. That's why this study will only take into account question items that have a significance value of less than 0.05. Indicators for delay, quality of information sharing, business intelligence systems, customer relationship management, and strategic supplier alliances were all employed in this study, and all of them had significant values of less than 5% or less than 0.05. Based on each question item's validity test. Such that each indicator that utilizes this research is thought to be a reliable and valid way to measure data that can then be investigated. This study's cross-loading values all pass the discriminant validity test, showing a value greater than 0.07. In order to ensure that every latent variable is unique from the others, discriminant validity is employed.

Table 1. Validity and Reliability

Variable	Cronbach's Alpha	Rho_A	Reliability Composite	Average Variant Extracted
Business Intelligence Systems	0.911	0.900	0.930	0.769
Strategic supplier partnership	0.784	0.787	0.874	0.698
Quality of Information Sharing	0.942	0.966	0.974	0.881
Postponement	0.924	0.945	0.964	0.900
Customer Relationship Management	0.892	0.891	0.948	0.902

Table 1 above explains that the validity of the aforementioned items is indicated by the composite reliability value being greater than the average variance retrieved or the reliability value based on a significance test of 0.05. On the other hand, the reliability coefficient value is a numerical value that is determined by the high and low reliability. A high degree of reliability suggests that the value is near to 1. Utilizing the Cronbach's alpha calculation to assess the instrument's reliability. Because the study tool is a questionnaire with a stratified scale. While an alpha value > 0.08 indicates that all items are consistently dependable and that all tests have excellent reliability, an alpha value > 0.7 indicates that the reliability is sufficient (sufficient reliability). It can be

explained for each variable as follows, based on the explanation given before.

The four question items that make up the Strategic supplier partnership have a Cronbach's alpha coefficient of 0.784, indicating that the variable or item is valid and trustworthy. The five question items that made up the Quality of Information Sharing had a Cronbach's alpha coefficient of 0.942, indicating that the variable or item is valid and reliable.

Four question items are used to measure Postponement, and the variable's Cronbach's alpha coefficient is 0.924%, indicating that it is a valid and reliable measure. There are four question items in the Business Intelligence Systems variable, and its cronbach's alpha coefficient is 0.911, indicating that the variable or item is valid and dependable. Lastly, the Customer Relationship Management variable comprises three question items. Its cronbach's alpha coefficient is 0.892, indicating that the variable or item is valid and reliable.

5.2 Data Analysis Text

The coefficient determinant test (R-Square) is used to measure how far the model explains the dependent variable. The following are the results of the coefficient determinant test in table 2.

Table 2. Determination Test Results

	R Square	Adjusted R Square
Business Intelligence Systems	0.673	0.663
Customer Relationship Management	0.74	0.750

Table 2 above shows that the business intelligence systems result is 0,663. This indicates that the quality of information sharing, postponement, and strategic supplier partnership have a 65, 1% influence on business intelligence systems, with other variables accounting for the remaining 34.9% of the influence.

Additionally, as can be seen from the above table, the results for Customer Relationship Management are obtained by the number 0,740. This indicates that 74% of the influence on Customer Relationship Management is attributed to the independent variables (Strategic supplier partnership, Quality of Information Sharing, and Postponement), with the remaining 26% being influenced by variables not covered in this study.

5.3 Hypothesis Test

This study uses multiple regression analysis methods to test the hypothesis. Theresults of hypothesis testing can be seen in table 3 & 4.

Table 3. Path Coefficient

	Original Sample (O)	Sample Average (M)	Standard Deviation (STDEV)	T Statistik (|O/STDEV|)	P Values
S → B	0.380	0.379	0.096	4.028	0.000
S → C	0.169	0.170	0.079	2.159	0.031
Q → B	0.247	0.256	0.091	2.763	0.006
Q → C	0.317	0.319	0.086	3.701	0.000
P → B	0.318	0.314	0.076	4.217	0.000
P → C	0.253	0.253	0.091	2.797	0.005
B → C	0.266	0.264	0.088	3.019	0.003

(S - Strategic supplier partnership, Q - Quality of Information Sharing, P-Postponement, B- Business Intelligence Systems, C- Customer Relationship Management).

Table 4. Hypothesis Test Result

Hypothesis	Coefficient	P Values	Conclusion
H1	0.380	0.000	Positive and significant
H2	0.169	0.031	Positive and significant
H3	0.247	0.006	Positive and significant
H4	0.317	0.000	Positive and significant
H5	0.318	0.000	Positive and significant
H6	0.253	0.005	Positive and significant
H7	0.266	0.003	Positive and significant

A number of Result were derived from the tables 3 and 4 above. According to the first hypothesis, Strategic supplier partnership has a significant influence on Business Intelligence Systems. The results of the hypothesis test are displayed in the table, and the coefficient value of (0,380) and the significance value of (0,000) indicate that the value is less than (0,05). According to the second hypothesis, Strategic supplier partnership has a significant influence on Customer Relationship Management. The results of the hypothesis test are displayed in the table, and the coefficient value of (0,169) and the significance value of (0,031) indicate that the value is less than (0,05).

Quality of Information Sharing has a significant influence on Business Intelligence Systems is illustrated by the third hypothesis. The hypothesis test results are shown in the table. The value is less than (0.05), as indicated by the coefficient value of (0,247) and significance value of 0,006. The fourth hypothesis holds that Quality of Information Sharing has a significant influence on Customer Relationship Management. The table presents the hypothesis test findings. A significance value of 0.000 and a coefficient value of (0,317) show that the value is less than (0.05).

The fifth hypothesis states that Postponement has a significant influence has a Business Intelligence Systems. The hypothesis test results are shown in the table, and the value is less than 0.05, as indicated by the coefficient value of 0,318 and significance value of 0,000. The sixth hypothesis states that Postponement has a significant influence has a Customer Relationship Management. The table presents the hypothesis test findings. A significance value of 0,005 and a coefficient value of 0,253 show that the value is less than 0.05.

The last hypothesis demonstrates that Business Intelligence Systems has a significant influence on Customer Relationship. The results of the hypothesis test are displayed in the table, and the coefficient value of (0,268) with a significance value of (0,003) indicates that the value is less than (0,05).

Table 5. Specific Indirect Effect Test

Hypothesis	Original Sample (O)	Sample Average (M)	Standard Deviation (STDEV)	T Statistik (|O/STDEV|)	P Values
S → B → C	0.085	0.082	0.034	2.487	0.014
Q → B → C	0.067	0.067	0.034	1.970	0.049
P → B → C	0.102	0.099	0.043	2.349	0.018

The outcomes of the indirect effect test through the mediation test are as follows. The Business Intelligence Systems of the as a Mediator on the Effect of Postponement, Quality of Information Sharing, and Strategic Supplier Partnership on Customer

Relationship Management is the indirect effect test.

The outcome of the strategic supplier partnership's indirect impact on business intelligence systems and customer relationship management is as follows. It is evident from table 5 above that the estimation findings contain multiple p-values (0,014) indicating an indirect influence. The indirect impact that business intelligence systems' perception of information sharing quality has on customer relationship management. It is evident from table 5 above that the estimation findings contain multiple p-values (0,049) indicating an indirect influence. Whereas the outcomes of the indirect impact of the delay on customer relationship management through business intelligence systems. The estimated indirect effect of the p-value (0,018) can be found in table 5 above. The study's findings support the notion that business intelligence systems, postponement, quality of information sharing, and strategic supplier partnerships all have an impact on customer relationship management.

6. CONCLUSION

This study investigates the impact of the effect of Supply Chain Management in Customer Relationship Management: The mediating role of Business Intelligence Systems within the logistics domain. The hypotheses proposed are tested through regression analysis, revealing significant coefficients and p-values. Results suggest that BI systems benefit from strategic supplier partnerships and quality information sharing, while customer relationship management benefits from BI systems, postponement strategies, and quality information sharing. Furthermore, indirect effects analyses indicate the influence of strategic supplier partnerships, information sharing quality, and postponement on customer relationship management through BI systems.

These results are corroborated by earlier research, which highlights the critical role that business intelligence (BI) plays in improving logistics operations, cost reduction, and decision-making. Literature also emphasizes the relationship between supply chain management (SCM) and business intelligence (BI), emphasizing the benefits of BI integration in SCM systems, including real-time data visualization, demand forecasting, and predictive analytics. Research findings further emphasize how crucial Information Technology (IT) resources are for fostering innovation and strengthening supply chain competencies, which in turn improves overall business performance.

In conclusion, this study contributes to understanding the multifaceted impacts of BI systems and strategic partnerships on customer relationship management in logistics. It underscores the significance of leveraging BI within SCM frameworks to achieve competitive advantages and optimize business performance in today's digitalized supply chain landscape.

REFERENCES

Anshari, M., Almunawar, M. N., Lim, S. A., & Al-Mudimigh, A. (2019). Customer relationship management and big data enabled: Personalization & customization of services. Applied Computing and Informatics, 15, 94–101.

Aleksandra Grabińska, & Leszek Ziora. (2019). The application of business intelligence systems in logistics. Review of selected practical examples. CzOTO, 1(1), 1028–1035.

Baars, H., Kemper, H. G., Lasi, H., & Siegel, M. (2008). Combining RFID Technology and Business Intelligence for Supply Chain Optimization – Scenarios for Retail Logistics. In: Proceedings of the 41st Hawaii International Conference on System Sciences.

Chatterjee, S., Mikalef, P., Khorana, S., & Kizgin, H. (2022). Assessing the Implementation of AI Integrated CRM System for B2C Relationship Management: Integrating Contingency Theory and Dynamic Capability View Theory. Information Systems Frontiers, 1–19.

Cheng, J., Singh, H. M., Zhang, Y.-C., & Wang, S.-Y. (2023). The impact of business intelligence, big data analytics capability, and green

knowledge management on sustainability performance. Journal of Cleaner Production, 429, 139410.

Ghazian, A., Hossaini, M. H., & Farsijani, H. (2016). The Effect of Customer Relationship Management and its Significant Relationship by Customers' Reactions in LG Company.

Gil-Gomez, H., Guerola-Navarro, V., Oltra-Badenes, R., & Lozano-Quilis, J. A. (2020). Customer relationship management: Digital transformation and sustainable business model innovation. Economic Research Ekonomska Istraživanja, 33, 2733–2750.

Hanaysha, J. R., & Al-Shaikh, M. E. (2022). An examination of customer relationship management dimensions and employee-based brand equity: A study on ride-hailing industry in Saudi Arabia. Research in Transportation Business and Management, 43, 100719.

Josiassen, A., Assaf, A. G., & Cvelbar, L. K. (2014). CRM and the bottom line: Do all CRM dimensions affect firm performance? International Journal of Hospitality Management, 36, 130–136.

Kamalaldin, A., Linde, L., Sjödin, D., & Parida, V. (2020). Transforming provider-customer relationships in digital servitization: A relational view on digitalization. Industrial Marketing Management, 89, 306–325.

Kaina R., Verma A. (2018). Logistics Management in Supply Chain – An overview. Materials Today: Proceedings, 5(2), 3811–3816.

Kasasbeh, E. A., Alzureikat, K. K., Alroud, S. F., & Alkasassbeh, W. A. K. (2021). The moderating effect of entrepreneurial marketing in the relationship between business intelligence systems and competitive advantage in Jordanian commercial banks. Management Science Letters, 11, 983–992.

Lemon, K. N., & Verhoef, P. C. (2016). Understanding Customer Experience Throughout the Customer Journey. Journal of Marketing, 80, 69–96.

Mainela, T., & Ulkuniemi, P. (2013). Personal interaction and customer relationship management in project business. Journal of Business and Industrial Marketing, 28, 103–110.

Martins C. L., Pato M. V. (2019). Supply chain sustainability: A tertiary literature review. Journal of cleaner production, 225, 995-1016.

Mukhamedjanova K. A. (2020). Concept Of Supply Chain Management. Journal of critical reviews, 7(2).

Ritter, T., & Geersbro, J. (2018). Multidexterity in customer relationship management: Managerial implications and a research agenda. Industrial Marketing Management, 69, 74–79.

Olexova, C. (2014). Business intelligence adoption: A case study in the retail chain. WSEAS Transactions on Business and Economics, 11.

Olszak, C., & Ziemba, E. (2012). Critical Success Factors for Implementing Business Intelligence Systems in Small and Medium Enterprises on the Example of Upper Silesia, Poland. Interdisciplinary Journal of Information, Knowledge, and Management, 7.

Presthus, W., & Canales, C. (2015). Business Intelligence Dashboard Design. A case study of a large Logistics company. Retrieved from http://ojs.bibsys.no/index.php/Nokobit/article/view/261/225.

Sahay, B. S., & Ranjan, J. (2008). Real time business intelligence in supply chain analytics. Information Management & Computer Security, 16(1), 28–48.

Senthil, S., Srirangacharyulu, B., & Ramesh, A. (2012). A decision-making methodology for the selection of reverse logistics operating channels. Procedia Engineering, 38, 418–428.

Šerić, N., Rozga, A., & Luetić, A. (2014). Relationship between Business Intelligence and Supply Chain Management for Marketing Decisions. Universal Journal of Industrial and Business Management, 2(2), 31–35.

Tan, P. S., Lee, S. S. G., & Goh, A. E. S. (2012). Multi-criteria decision techniques for context-aware B2B collaboration in supply chains. Decision Support Systems, 52, 779–789.

Trieu, V.-H. (2017). Getting value from Business Intelligence systems: A review and research agenda. Decision Support Systems, 93, 111-124.

Tozin, L. J. (2022). Business Intelligence Systems in Supply Chain Management. *Corso di Laurea Magistrale in International Economics and Commerce. Università Politecnica delle Marche, Facoltà di Economia "Giorgio Fuà".

Langlois, A., & Chauvel, B. (2017). The impact of supply chain management on business intelligence. Journal of Intelligence Studies in Business, 7(2), 51–61.

Yeniyurt, S., Wu, F., Kim, D., et al. (2019). Information technology resources, innovativeness, and supply chain capabilities as drivers of business performance: A retrospective and future research directions. Industrial Marketing Management, 79, 46-52.

Journal of Intelligence Studies in Business Vol. 14 No. 1 (2024) pp. 42–54
Open Access: Freely available at: http://jisib.com/

The influence of competitive intelligence on sustainable competitive advantage in Jordanian telecommunications companies: Mediating Role information sharing

Bashar Alkhawaldeh*
Department of Administrative Sciences, Faculty of Business, Jerash University, Jordan
b.khawaldeh@jpu.edu.jo

Farah Zuhier Jaran
Department, Luminus Technical University college LTUC, Jordan
Universiti sains, Malaysia
jaran_farah@yahoo.com

Kadri S. Al-Shakri
Department of Management Information Systems
Ajloun National Private University, Ajloun, Jordan

Hazem Almahameed
Management Information Systems, Irbid National University, Jordan
Universiti sains, Malaysia

Ismail. A. Bany Taha
Faculty of Business, Department of Business Administration, Jerash University, Jordan

Received 25 February 2024 Accepted 25 March 2024

ABSTRACT This study investigates the influence of competitive intelligence (CI) on sustainable competitive advantage (SCA) in Jordanian telecommunications companies, with a specific focus on the mediating role of information sharing (IS). A sample of approximately 200 participants, comprising individuals knowledgeable about or involved in CI practices within their organizations, is targeted for this research. Stratified random sampling, complemented by convenience sampling methods, ensures representative participation from various departments and hierarchical levels within telecommunications firms. Data is collected through structured questionnaires, employing validated scales to measure CI practices, IS behaviors, and SCA. The data analysis was carried out using Partial Least Squares Structural Equation Modelling (PLS-SEM), which can be used to investigate the direct and indirect effects. The results show a weak direct effect of CI on SCA and a strong and highly significant direct effect of CI on IS. In addition, IS has a significant positive effect on SCA. The mediation analysis indicates that IS fully mediates CI-SCA relationship, indicating how important information sharing is for the transformation of CI into sustainable competitive advantage in Jordanian telecommunication companies. These findings enhance our knowledge about the intricate relationships between CI, IS and SCA hence giving managers practical ideas on how to improve their competitiveness in the telecommunications industry.

KEYWORDS: Competitive Intelligence, Information Sharing, Jordanian Telecommunications Companies, PLS-SEM, Sustainable Competitive Advantage

* *Corresponding author*

INTRODUCTION

Interconnected forms of knowledge-based and network-based organisations have emerged to cope with today's complex, ambiguous and changing environment with its fluid boundaries (Corbett & Spinello, 2020). The advantage of being a market leader is rapidly disappearing today as organisations find themselves in a highly competitive environment. To remain competitive in this environment, companies need to continuously monitor the business landscape, gather relevant cross-company data, and act skillfully to exploit opportunities and mitigate threats to outperform their competitors. In Jordan's dynamic telecoms sector, technologies are evolving rapidly, customer preferences happen to be dynamic, and competition between companies to maintain a sustainable competitive advantage is fierce. Over the last years, the Jordanian telecommunications industry has undergone radical changes, catching up with the digital transformation and connectivity trends worldwide (Ziakis & Vlachopoulou, 2023). In the drive of telco companies to maintain and extend the market share, competitive intelligence becomes an imperative dimension. Competitive intelligence is about locating, combining and organizing information about competitors, consumer behavior and the market in general for strategic purposes. A critical objective of businesses on the verge of long-term viability and success is to gain sustainable competitive advantage which is attained by the help of unique resources, capabilities and/or strategic positions unachievable to the competitors. Establishing competitive intelligence as the key factor that will stimulate the development of sustainable competitive advantage requires an in-depth understanding of the intricacies of the relationship by the Jordanian telecom firms (Dymitrowski & Mickiewicz, 2021). An additional level of complexity lies with information sharing process, which involves sharing information with other organizational levels to create a teamwork based and more informed decision-making culture. Despite the sector becoming a base for the country's economic improvement, leading growth and innovation (Mansour et al., 2003) the telecommunications industry continues to face significant challenges. The Jordan telecommunications sector has seen the exceptional development while its dynamic and interesting landscape is made up of established incumbents and agile newcomers. However, this diversity requires businesses to constantly make changes in relation to technological shifts, customer preferences which keep changing, and changing regulatory frameworks (Alom & Mourdi, 2023). It is at this highly complex system that the screw of competitive intelligence starts to show. Jordan's telecom industry has witnessed tremendous growth, which is mainly driven by the increase in connectivity rate, rise in smartphone penetration, and evolution of digital platforms. Telecom companies in the attempt to maintain the advantage, find themselves lagging behind and are in the race of remaining ahead of the technology curve. Existing market leaders who have their standing and distribution channels are faced with the dilemma of not only being ahead in the race but also mitigating the threat posed by the new players in the market. Fast and precise competitive intelligence is a crucial strategy tool (Wong, 2038), allowing firms to extract trends from markets, foresee the growth of the industry, and understand the tactics of their rivals (Sudirjo, 2023). Based on the gathered data regarding strategies of competitors, technological innovations, and the customer feedback, telecom companies are able to make decisions that are well-aligned to their target audience's changing needs (Lebana-Cabanillas & Blanco-Encomienda, 2024). CI becomes a pillar of orientation, steering companies through the maze of telecom and making decisions which are in line with the surrounding environment. In addition, the continuous transformation of the sector in digital space requires adaptability and responsiveness - CI serves as the foresight to react to technological changes and not lag behind on innovation (Wang et al., 2022). Awareness of the competitive landscape contributes to a partnership drive, investment and emergence of new market opportunities,

which lead to continuous improvement and growth. Against the backdrop of a regulatory environment under permanent transformation (Bag et al., 2023), CI is an imperative. Companies are advised to monitors new legal and regulatory developments that could be of both direct and indirect operational impacts and proactively adopt regulatory intelligence to properly negotiate the complexities and mitigate risks while at the same time identifying new opportunities that may arise due to changes in the regulatory environment. Accordingly, this paper is set to reveal the complex internal relations between competitive intelligence, information sharing, and sustainable competitive advantage of Jordan's telecommunication Industry.

LITERATURE REVIEW

Competitive intelligence

Obtaining a detailed picture of the various factors that play a decisive role in a company's business activities is known as competitive intelligence (Madureira, et al., 2021). Since environmental specifics and the business niche change frequently and compete with similar environmental conditions, many approaches to the concept have been developed in the literature (Ranjan and Foropon, 2021). The following are examples of some of these explanations: According to Cavallo, et al., (2021), competitive intelligence is the practice of gathering information about one's competitors and the competitive environment. This knowledge is then used for performance improvement planning and decision-making. Competitive intelligence is defined as the process of enhancing planning and decision making by acquiring knowledge from the industrial environment and rivals (Atkinson, et al., 2022; Wu, et al., 2023). Chinyavada, & Sewdass, (2023) centred on strategies for information gathering and acquisition to attain competitive intelligence, whereas Köseoglu, et al., (2021) offered identical definitions. According Khalid (2023, competitive intelligence has four major benefits for service-oriented businesses: differentiating the organisation, creating validity for the company, pre-selling concepts to target audiences, and preparing an integrated marketing communication plan. Competitive intelligence or intelligent is a continuous integrated process (Kula, & Naktiyok, 2021), which involves a variety of actions, steps, and structures that require be implemented in a sequence (Shapira, 2021). The common stages of competitive intelligence process listed in various studies include focus and planning, collecting, analysis, communication, process and structure, organizational awareness, and culture.

Sustainable competitive advantage

Sustainable competitive advantage in Jordanian telecommunications companies is built upon several key pillars, reflecting the industry's dynamic nature and the evolving needs of consumers. Firstly, investment in cutting-edge technology and infrastructure is paramount. Companies that continuously upgrade their networks, deploy advanced technologies such as 5G, and enhance their service offerings position themselves ahead of competitors in terms of speed, reliability, and innovation (Jatmiko, et al., 2021). Secondly, a relentless focus on customer experience is essential. Telecommunication companies in Jordan are required to adopt top-of-the-line services, individualized services and user-friendly networks in order to meet the expectations of tech-savvy customers. Through listening to the customers' feedback, preferences, and emerging trends, companies are able to build and nurture their relationships and brand loyalty (Shah, 2022). Steamily, thirdly, strategic partnerships and alliances are a critical factor in developing the sustainable competitive advantage. Collaboration with content providers, device manufacturers, ecosystem players allows telecom companies to provide added value services and possibly stand out in the market (Kahupi et al. 2021). Through increased synergies and complementary strengths, companies move closer to achieve their value proposition and broaden horizons. Notwithstanding that, brand and marketing strategies also matter as they influence consumer perception from marketing share (Mahdi, & Nassar,2021). Strong brand identity and advertising of the unique selling point including the promotion that focuses on the audience in each repect aid telecom companies in a fierce

competition. A strong brand essence creates trust among customers and further consolidates the organization's position in the market (Bansiruy, et al, 2022). Finally, CSR and sustainability programs reflect positively and improve the reputation and credibility of telecommunication companies in Jordan. Companies that adopt the ESG principles illustrate that they are willing to make some contribution to the space, the society and to the environment (Wang.).et, 2021).

Information sharing

Information sharing is a crucial factor in telecommunication operations in Jordanian companies, which helps to bring together capabilities, making decisions, and improving innovation across several departments and functions (Abbas et al., 2022). This fact has not been lost to these businesses as they understand the cruciality of timeous collaboration and knowledge transfer in staying ahead of the market and serve the dynamic needs of customers promptly (Doetzer & Pilaum, 2021). That is, information sharing internally helps to achieve the coordination and cohesion of different groups such as teams and divisions within telecom companies. Communication is key in all aspects of operations, such as sales, marketing, technical support, and network operations; this means that the information provided must be communicated to all the stakeholders timely and transparently, keyed on strategies, objectives, performance metrics, and operational challenges (Wu et al., 2022). The alignment of the team makes them work coherently towards common goals and enables the execution of tasks effectively with the optimal use of resources as well as minimization of inefficiencies. Also, information sharing opens avenues for telecom firms to leverage on the collective cognitive ability of their staff members. Establishing communication channels for employees to provide inputs, capture best practices, and articulate lessons learnt enables companies to access an external repository of wisdom and grit (Kong et al., 2021). This enables a culture of learning and continuous improvement thus as well improving problem solving and decision-making. Internally, information sharing promotes the development of the participating organizations, suppliers, partners, and regulatory authorities (Wang et al., 2021). Jordanian telecom companies, via involved communication channels, facilitate the purchasing of equipment from vendors, the negotiations of contracts and the delivery of products and services to the set deadlines. Just like that, keeping these bodies informed about the rules and regulations demands the organization to be open and to provide all data to them.

Previous Studies and Hypothesis Development

Competitive Intelligence and Sustainable Competitive Advantage

Many studies have dealt with the interlinkage between competitive intelligence (CI) initiatives and sustainable competitive advantage (SCA) across diverse industries. The study done by Li and Liang in 2017 discovered that the enterprises well utilizing CI methods are more prone to achieve the level of SCA by continuously sense the market dynamic, so that true their competitiveness. Futhermore, literature suggest CI play a role in increasing the efficiency of strategic choice due to the acquisition of deep understanding of market dynamics and competitive behavior (Camison-Zornumba et al., 2016). Furthermore, CI plays a profound role in identifying strategic threats/opportunities, taking advantage of organizational strengths while protecting against risks (Khan et al., 2018). On the basis of the acquired evidences, this study hypothesized:

H1: Competitive Intelligence and Sustainable Competitive Advantage have significant and positive relationship

Competitive Intelligence and Information Sharing

Research on the dynamics of competitive intelligence (CI) and information sharing has pointed out their interdependence and reciprocal nature. Studies of Gupta and Govindarajan (2018) and Von Krogh et al. (2012) evince that CI is highly dependent on information-sharing inside an organization which is built on effective mechanisms. Information sharing is the aggregation, the

analyzing, and the disclosure of intelligence about competitors, market trends, and of future threats, which enables the active participation of management team in the decision-making process, leading to success. Moreover, research has indicated that knowledge exchange brings into existence a collaborative culture which has a positive effect on organizational learning and innovation (Shen et al., 2016). By enabling cross-functional communication and collaboration, the company can harness the diverse competencies to convert intelligence information into tactical actions. (Singh et al., 2019). As a consequence, studies found that the sharing of information overcomes the internal limits via partnerships and alliances with the external stakeholders such as suppliers, customers, and industry associations (Li et al., 2017). Collaborative information sharing initiatives are helping companies collaborate in building intelligence which in turn will enable them understand the market dynamics and gain advantage over competitors. Based on this evidence, this study hypothesized that:

H2: Competitive Intelligence and Information Sharing have significant and positive relationship

Information Sharing and Sustainable Competitive Advantage

Extensive research from literature has identified information sharing as a strong precursor of gaining sustainable competitive advantage (SCA) in several sectors. A variety of studies such as Hu et al. (2018) and Liang et al. (2019) have underscored that information sharing is the best and critical pillar that drives organizational agility and enables an organization be able to respond to market dynamics and at the same time create opportunities. Besides, the research supports that information sharing enables collaboration and knowledge transfer among internal stakeholders, which results in organizational learning and innovation capacity (Mahnke et al., 2018). Shared information can be utilized by firms in such ways as increasing product development, systematizing operations and customer service delivery in order to improve competitive position (Lin et al., 2017). As collaboration efforts extend beyond the organizational boundaries through partnerships and alliance relationships with the external stakeholders such as suppliers, customers, and industry associations. Joint information sharing allows access to actionable insights, deeper breadths of networks, and synergies which can be leveraged to gain the competitive advantage (Ritala et al., 2014). Based on this evidence, this study hypothesized that:

H3: Information Sharing and Sustainable Competitive Advantage have significant and positive relationship

Mediating Role information sharing.

The mediating role of information sharing has been widely examined in various organizational contexts by different studies, which shed light on the associated implications for important outcomes such as innovation, performance, and competitive advantage. For example, Lu et al. (2016) and Hsu et al. (2018) argue that organization elements including culture, structure and technology adoption act as agents of mediation between information sharing and innovation performance. In this way Chang et al. (2017) and Wang et al. (2019) have indicated its usefulness in fostering internal cooperation within the company by making it possible for employees to share their knowledge more effectively with one another thereby improving decision-making process and overall firms' performance. Thus, Li et al., (2018) and Wu et al., (2020), exhibited that in mediating inter-organizational relationships concerning supply chain performance or competitive advantage information sharing operates also as a mediator. This study thus hypothesized based on these findings that:

H4: Information Sharing mediate the effect of Competitive Intelligence on Sustainable Competitive Advantage

Based on the above evidences, this study developed the following research framework.

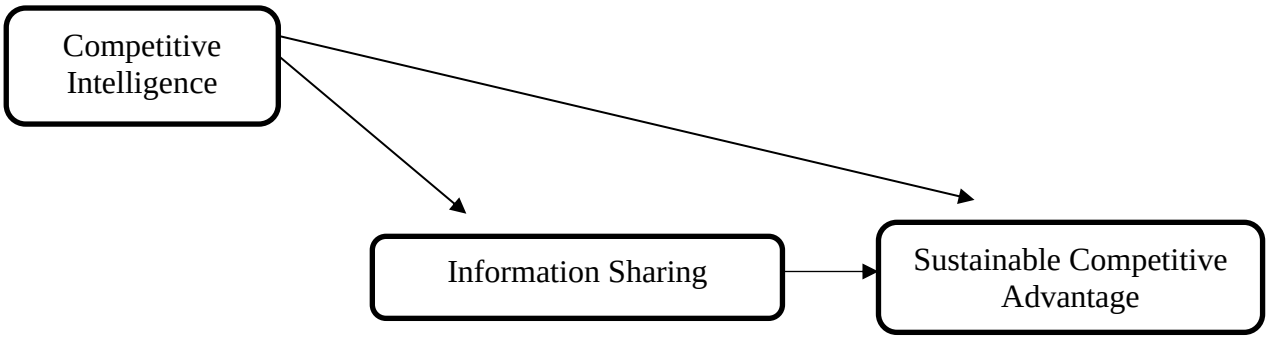

Figure 1 Research Framework

Research Methodology

This research aims to examine the influence of competitive intelligence (CI) on sustainable competitive advantage (SCA) in Jordanian telecommunications companies, with a focus on the mediating role of information sharing. The target population comprises employees working in various Jordanian telecommunications companies involved in roles related to competitive intelligence, strategy, marketing, and operations. The study focusses on individuals who possess knowledge or involvement in CI practices within their organizations. A sample size of approximately 200 participants will be targeted for this study. This sample size is deemed sufficient to achieve statistical power for PLS-SEM analysis, considering the complexity of the model, desired effect size, and potential dropout rate. Stratified random sampling utilized to ensure representation from different departments and hierarchical levels within telecommunications companies. Additionally, convenience sampling methods will be employed to facilitate access to willing participants. This combination of techniques will enhance the representativeness of the sample. Structured questionnaires completed by select individuals, were used in data collection. The questionnaire contains validated scales to measure variables connected to competitive intelligence practices, information sharing behaviors and sustainable competitive advantage. Pretesting is conducted on the questionnaire to enhance clarity, reliability and validity. Adopted and Altered Items. Competitive Intelligence (CI) sources of Competitive Intelligence are adapted from Li & Ling (3017), Gupta & Govindarajan (2018), CI Unliration Information Sharing adapted from Von Krogh et al. (2012). This study adopts the model of Sustainable Competitive Advantage (SCA) developed by Camisón-Zornoza et al. (2016) and Chiang et al. (2018). Partial least squares structural equation modeling will be used to analyze the relationships between variables PLS-SEM is suitable for analyzing complex models with small sample sizes and enables examining direct and indirect effects. The analysis will evaluate the direct effect of CI on SCA as well as the mediating role played by information sharing. The ethical consideration should always be considered during research process; informed consent as well as confidentiality which should be observed by all researchers who carry out investigations if they want their studies to be obeying ethical considerations in a particular legal framework or field of study.Informed consent will be obtained from participants and this will ensure that they do not feel their privacy invaded with at any given circumstance.The right of withdrawal without cause shall not be denied anyone who wishes to withdraw from this project at any stage including those in its infancy stages

RESULTS

Measurement Model

Table 1 shows the factor loadings, which illustrate the power and direction of association between each item and its relevant latent construct (CI, IS, SCA) in the research model. The higher loadings indicate that there is a close relationship between the item and what is latent behind it (Huang, 2021). All items for Competitive Intelligence (CI) have high loading scores that fall within 0.771 – 0.890 range thereby indicating their significant contribution to measuring CI

construct. Apparently, these items reflect various dimensions of CI in Jordanian telecommunication companies selected. In the same way, there are Information Sharing (IS) loads all over from 0.750 to 0.801 denoting their relevance to assessing IS behaviors within the organization. Sustainable Competitive Advantage(SCA) most of its factors have heavy loads ranging from 0.752-0.841 meaning that a lot of them measure distinct facets of SCA.

Table 1 Factor Loading

Items	CI	IS	SCA
CI1	0.771		
CI2	0.856		
CI3	0.800		
CI4	0.857		
CI5	0.890		
CI6	0.871		
CI7	0.775		
IS1		0.746	
IS2		0.713	
IS3		0.718	
IS4		0.733	
IS5		0.744	
IS6		0.750	
IS7		0.730	
SCA2			0.785
SCA3			0.821
SCA4			0.793
SCA5			0.840
SCA6			0.841
SCA7			0.829
SCA1			0.752

Table 2 presents the reliability measures for the constructs in the research model: Competitive Intelligence (CI), Information Sharing (IS), and Sustainable Competitive Advantage (SCA). Reliability assesses the consistency and stability of the constructs. Cronbach's alpha (α) values above 0.7 are generally considered acceptable. In this study, CI demonstrates high reliability with a Cronbach's alpha of 0.926, indicating strong internal consistency among the CI items. IS exhibits good reliability with an alpha of 0.857, while SCA shows acceptable reliability with an alpha of 0.893. Composite reliability (CR) evaluates the extent to which items within a construct measure the same underlying concept. Values above 0.7 denote satisfactory reliability. All constructs exceed this threshold, with CR for CI, IS, and SCA being 0.941, 0.891, and 0.947 respectively. Average variance extracted (AVE) assess the extent to which constructs demonstrate adequate convergent validity. In this study, CI and SCA show acceptable convergent validity, while IS falls slightly below the threshold, suggesting the items may not fully capture the IS construct (Fauzi, 2022).

Table 2. Reliability and Validity

Constructs	CA	CR (rho_a)	CR (rho_c)	AVE
CI	0.926	0.927	0.94	0.693
IS	0.857	0.858	0.891	0.538
SCA	0.893	0.898	0.917	0.614

Table 3 presents the results of discriminant validity analysis for the constructs in the research model: Competitive Intelligence (CI), Information Sharing (IS), and Sustainable Competitive Advantage (SCA). The Heterotrait-Monotrait (HTMT) ratio assesses the extent to which constructs are more strongly correlated with their own items (monotrait) compared to items from other constructs (heterotrait). Generally, HTMT values below 0.85 indicate discriminant validity. In Table 3, all HTMT ratios fall below the threshold, indicating satisfactory discriminant validity between the constructs. The Fornell-Lacker criterion compares the square root of the AVE of each construct with the correlations between that construct and other constructs. A construct's AVE should be higher than its correlations with other constructs to demonstrate discriminant validity. In Table 3, the diagonal values represent the square roots of the AVE for each construct, while the off-diagonal values represent the correlations between constructs. All diagonal values are higher than the corresponding off-diagonal values, confirming discriminant validity. Generally, Table 3 demonstrates satisfactory discriminant validity among the constructs, indicating that each construct is distinct and measures a unique aspect of the research model (Gotthardt, & Mezhuyev, 2022). These results support the validity of the

measurement model in assessing the relationships between CI, IS, and SCA in Jordanian telecommunications companies.

Table 3. Discriminant Validity

Constructs	Heterotrait-Monotrait Ratio			Fornell Lacker Criterion		
	CI	IS	SCA	CI	IS	SCA
CI				0.833		
IS	0.847			0.768	0.733	
SCA	0.721	0.886		0.654	0.77	0.783

Structural Results and Discussion

Table 4 and Figure 2 presents the regression results and mediation analysis for the relationships between Competitive Intelligence (CI), Information Sharing (IS), and Sustainable Competitive Advantage (SCA) in Jordanian telecommunications companies. The analysis reveals that the relationship between Competitive Intelligence (CI) and Sustainable Competitive Advantage (SCA) is positive but weak, as indicated by the beta coefficient of 0.151. However, the p-value of 0.116 suggests that this relationship is not statistically significant at the conventional significance level of 0.05. Therefore, the hypothesis proposing a direct influence of CI on SCA is not supported by the data. This result implies that while CI may have some impact on SCA, it is not substantial enough to be considered statistically significant. Other factors not accounted for in the model mate influencing the relationship between CT and SCA. or the effect of Ct o SCA may he mediated by other variables not included in the analysis. Thus, while CI remains an important aspect of strategic decision-making and competitive positioning within telecommunications companies, its direct contribution to SCA in this context appears to be limited. Further research may be needed to explore additional factors or potential mediators that could explain the relationship between CI and SCA more comprehensively.

The analysis demonstrates a significant and robust relationship between Competitive Intelligence (CI) and Information Sing (IS) within Jordanian telecommunications companies. The strong beta coefficient of 0.768, coupled with a p-value of 0.000, indicates substantial support for the hypothesis proposing that CI positively influences IS. The findings indicate that investment in CT activities by firms is more likely to create a culture of information-sharing among employees. Furthermore, CI acts as a driver for gathering important insights and intelligence about rivals and market conditions through good practices of sharing information across the organization. The study's results stress how critical C is for supporting cooperation, knowledge transfer, and decision-making within telecom companies. Information sharing improves. Thereby, CT helps integrate competitive insights better leading possibly to enhanced strategic stance vis-à-vis the erratic telecommunications sector present in Jordan.

The analysis shows an inverse relationship between Information Sharing En and Sustainable Competitive Advantage (SCA) among Jordanian Telcoms industries that is significant at 1% level. In addition, beta value coefficient equals to 0.654 with p-value of 0000 showed strong evidence to support the hypothesis suggesting that 15 has positive effect on SCA. This result implies that companies with a culture of effective information sharing among employees are more likely to achieve sustainable competitive advantage. By sharing knowledge, insights, and resources across departments and hierarchies, organizations can enhance decision-making, innovation, and adaptability, ultimately strengthening their competitive position in the market. The findings underscore the importance of fostering an environment conducive to information sharing within telecommunications companies. Encouraging collaboration, transparency, and open communication channels can facilitate the dissemination of valuable insights and promote organizational

learning, thereby enhancing the ability of companies Magapitalize on opportunities and navigate challenges in the dynamic business landscape of Jordan's telecommunications industry

The mediation analysis highlights the indirect influence of Comparative Intelligence (CI) on Sustainable Competitive Advantage (SCA) (hrough: Information Sharing (55) within Jordanian telecommunications companies. The calculated indirect effect coefficient of 0503, coupled with-a significant p-value of 0000, underscores the robust statistical significance of this indirect relationship. This result suggests that while Ct may not directly lead to SCA. a substantial portion of its impact on SCA is mediated by the extent of information sharing procures within organisations, in other words, the insights and intelligence gathered through Cl activities are more effectively translated into sustainable competitive advantage when they are shared utilized across the organization through effective information sharing mechanisms. The findings underscore the critical role of information sharing as a mediating factor in the relationship between Cl and SCA. By facilitating the dissemination of knowledge, fostering collaboration, and enhancing decision-making processes, information sharing acts as a conduit through which the benefits of CI are realized, ultimately contributing to the competitive success of telecommunications companies in Jordan.

Table 4. Regression Results

Path Analysis	Beta	STDEV	T statistics	P-values	Decision
CI -> SCA	0.151	0.096	1.574	0.116	Not supported
CI -> IS	0.768	0.03	25.669	0.000	Supported
IS -> SCA	0.654	0.084	7.747	0.000	Supported
Mediation Result using Indirect Effect					
CI -> SCA	0.503	0.07	7.131	0.000	Supported

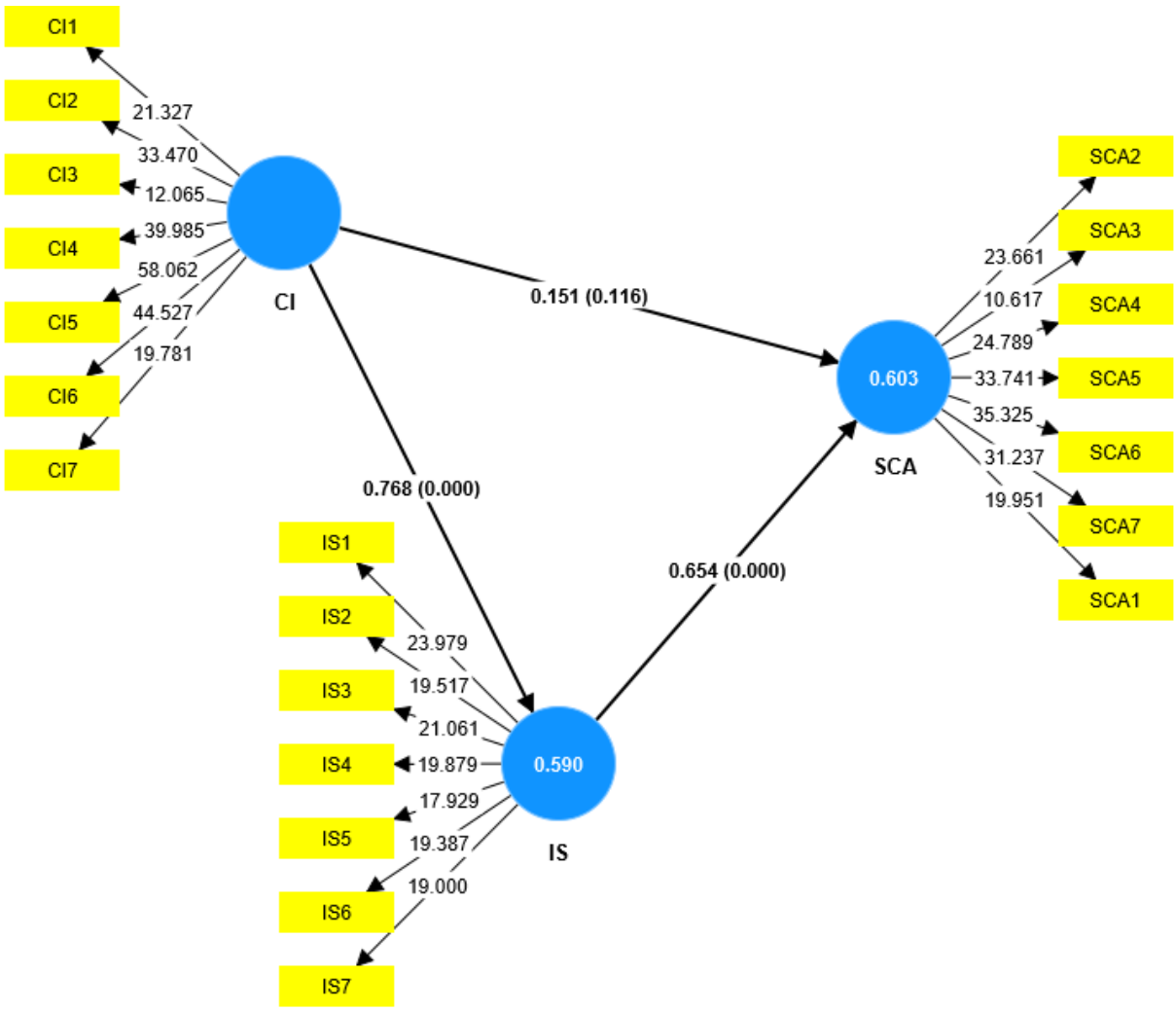

Figure 2. Graphical Result

Implications of the Study

This research found that CI might not be a direct path to SCA in Jordanian telecommunications industry but is a significant IS influencer. This matches with theoretical frameworks that emphasize on information sharing as a mediating factor between CI and SCA. The report demonstrates the complex interrelationships among CI, IS and SCA which require a holistic understanding of how competitive advantages are achieved. It is therefore important for managers in Jordanian telecommunication companies to establish mechanisms for sharing information so as to promote sustainable competitive advantage (SCA) by turning CT into SCA. While there is great importance in investing in CI activities, equal emphasis should also be laid on facilitating effective information exchange within the organization. By doing this manager can encourage collaboration through incentives which will enhance knowledge transfer thus affecting decision-making processes that contribute to maintaining competitive advantage in the industry. Thus, these results would be helpful tools for management and practitioners working within such organizations as telecommunication companies located within Jordan's jurisdiction. Such outcomes justify the significance of integrating Cl and IS practices into strategic decision making process Telecommunications firms should allocate funds towards platforms and systems that promote knowledge exchange and teamwork among staffAdditionally, training programs and workshops can be organized to educate employees on the importance of CT and 15 and how they contribute to achieving sustainable competitive advantage. By implementing these practical recommendations, companies

can better leverage their resources and capabilities to thrive in the competitive telecommunications landscape of Jordan.

Conclusion, Limitations and Recommendations for Future Studies

The study provides valuable insights into the relationship between Competitive Intelligence (CD, Information Sharing (IS), and Sustainable Competitive Advantage (SCA) in Jordanian telecommunications companies. While the direct impact of CI on SCA was found to be weak and statistically insignificant, the results highlight the crucial rale of 15 as a mediator in this relationship, Information sharing positively influences both Cl and SCA, with a significant portion of the effect of C1 on SCA being mediated by IS. These findings highlight the importance of fostering a collaborative and knowledge-sharing culture within organizations, to leverage CI effectively and achieve sustainable competitive edge in Jordan's dynamic telecom sector. However, the focus on a specific industry and geographical context may limit generalizability. Additionally, using self-reported survey data may introduce response bias and errors. Future studies could address these limitations through longitudinal research across different industries and regions, and by utilizing mixed methods to triangulate findings. Future research could explore additional variables influencing the relationship between CI, information sharing, and SCA. While this study was situated in Jordan's telecom sector, examining these connections in other contexts could provide valuable insights. Long-term, multi-method studies tracking combinations of factors over time may uncover deeper complexities. This research serves as a foundation which subsequent work can build upon to unravel the nuances within these organizational phenomena. leadership sole, and technology adoption. Additionally, comparative studies across different industries and countries could provide valuable insights into the contextual factors shaping these relationships. Furthermore, qualitative research methods, such as interviews and case studies, could offer a deeper understanding of the mechanisms through which CI and IS contribute to SCA. Overall, continued research in this area is essential for advancing our understanding of competitive intelligence practices and their implications for organizational performance and competitiveness.

REFERENCES

Abbas, A. F., Jusoh, A., Mas' od, A., Alsharif, A. H., & Ali, J. (2022). Bibliometrix analysis of information sharing in social media. *Cogent Business & Management*, *9*(1), 2016556.

Allioui, H., & Mourdi, Y. (2023). Unleashing the potential of AI: Investigating cutting-edge technologies that are transforming businesses. *International Journal of Computer Engineering and Data Science (IJCEDS)*, *3*(2), 1-12.

Atkinson, P., Hizaji, M., Nazarian, A., & Abasi, A. (2022). Attaining organisational agility through competitive intelligence: the roles of strategic flexibility and organisational innovation. *Total Quality Management & Business Excellence*, *33*(3-4), 297-317.

Bag, S., Srivastava, G., Gupta, S., Zhang, J. Z., & Kamble, S. (2023). Change adaptation capability, business-to-business marketing capability and firm performance: Integrating institutional theory and dynamic capability view. *Industrial Marketing Management*, *115*, 470-483.

Banmairuroy, W., Kritjaroen, T., & Homsombat, W. (2022). The effect of knowledge-oriented leadership and human resource development on sustainable competitive advantage through organizational innovation's component factors: Evidence from Thailand's new S-curve industries. *Asia Pacific Management Review*, *27*(3), 200-209.

Cavallo, A., Sanasi, S., Ghezzi, A., & Rangone, A. (2021). Competitive intelligence and strategy formulation: connecting the dots. *Competitiveness Review: An*

International Business Journal, *31*(2), 250-275.

Chinyavada, J., & Sewdass, N. (2023). Exploring competitive intelligence practices to enhance growth of the agro-processors in Limpopo Province. *Journal of Intelligence Studies in Business*, *13*(Special Issue 1), 52-75.

Corbett, F., & Spinello, E. (2020). Connectivism and leadership: harnessing a learning theory for the digital age to redefine leadership in the twenty-first century. *Heliyon*, *6*(1).

Doetzer, M., & Pflaum, A. (2021). The role of digitalized information sharing for flexibility capability utilization: lessons from Germany and Japan. *International Journal of Physical Distribution & Logistics Management*, *51*(2), 181-203.

Dymitrowski, A., & Mielcarek, P. (2021). Business model innovation based on new technologies and its influence on a company's competitive advantage. *Journal of Theoretical and Applied Electronic Commerce Research*, *16*(6), 2110-2128.

Fauzi, M. A. (2022). Partial Least Square Structural Equation Modelling (PLS-SEM) in Knowledge Management Studies: Knowledge Sharing in Virtual Communities. *Knowledge Management & E-Learning*, *14*(1), 103-124.

Gotthardt, M., & Mezhuyev, V. (2022). Measuring the Success of Recommender Systems: A PLS-SEM Approach. *IEEE Access*, *10*, 30610-30623.

Guerin, T. F. (2022). Roles of company directors and the implications for governing for the emerging impacts of climate risks in the fresh food sector: A review. *Food Control*, *133*, 108600.

Huang, C. H. (2021). Using PLS-SEM model to explore the influencing factors of learning satisfaction in blended learning. *Education Sciences*, *11*(5), 249.

Jatmiko, B., Udin, U. D. I. N., Raharti, R., Laras, T., & Ardhi, K. F. (2021). Strategies for MSMEs to achieve sustainable competitive advantage: The SWOT analysis method. *The Journal of Asian Finance, Economics and Business*, *8*(3), 505-515.

Kahupi, I., Hull, C. E., Okorie, O., & Millette, S. (2021). Building competitive advantage with sustainable products–A case study perspective of stakeholders. *Journal of Cleaner Production*, *289*, 125699.

Kahupi, I., Hull, C. E., Okorie, O., & Millette, S. (2021). Building competitive advantage with sustainable products–A case study perspective of stakeholders. *Journal of Cleaner Production*, *289*, 125699.

Khalid Alrashedi, A. (2023). The key criteria that determine the degree to which management's use of competitive intelligence. *Cogent Business & Management*, *10*(2), 2250553.

Kong, T., Feng, T., & Huo, B. (2021). Green supply chain integration and financial performance: A social contagion and information sharing perspective. *Business Strategy and the Environment*, *30*(5), 2255-2270.

Köseoglu, M. A., Mehraliyev, F., Altin, M., & Okumus, F. (2021). Competitor intelligence and analysis (CIA) model and online reviews: integrating big data text mining with network analysis for strategic analysis. *Tourism Review*, *76*(3), 529-552.

Kula, M. E., & Naktiyok, A. (2021). Strategic thinking and competitive intelligence: Comparative research in the automotive and communication industries. *Journal of Intelligence Studies in Business*, *11*(2).

Liébana-Cabanillas, F., & Blanco-Encomienda, F. J. (2024). Impact of big data analytics on telecom companies' competitive advantage. *Technology in Society*, *76*, 102459.

Madureira, L., Popovič, A., & Castelli, M. (2021). Competitive intelligence: A unified view and modular definition. *Technological*

Forecasting and Social Change, *173*, 121086.

Mahdi, O. R., & Nassar, I. A. (2021). The business model of sustainable competitive advantage through strategic leadership capabilities and knowledge management processes to overcome covid-19 pandemic. *Sustainability*, *13*(17), 9891.

Mansour, M. H., Al Zeaideen, K. A., Altaee, M. A., Kharasheh, Y. K., Abu Dokhan, W. O., & Dahlan, M. (2023). The Role of Electronic Management in Promoting Organizational Creativity: A Case Study of Orange Telecom Company/Jordan. In *Artificial Intelligence (AI) and Finance* (pp. 197-208). Cham: Springer Nature Switzerland.

Ranjan, J., & Foropon, C. (2021). Big data analytics in building the competitive intelligence of organizations. *International Journal of Information Management*, *56*, 102231.

Saqib, N., & Satar, M. S. (2021). Exploring business model innovation for competitive advantage: a lesson from an emerging market. *International Journal of Innovation Science*, *13*(4), 477-491.

Shah, T. R. (2022). Can big data analytics help organisations achieve sustainable competitive advantage? A developmental enquiry. *Technology in Society*, *68*, 101801.

Shapira, I. (2021). The limited influence of competitive intelligence over corporate strategy in Israel: historical, organizational, conceptual, and cultural explanations. *Intelligence and National Security*, *36*(1), 95-115.

Sudirjo, F. (2023). Marketing Strategy in Improving Product Competitiveness in the Global Market. *Journal of Contemporary Administration and Management (ADMAN)*, *1*(2), 63-69.

Wang, H., Ko, E., Woodside, A., & Yu, J. (2021). SNS marketing activities as a sustainable competitive advantage and traditional market equity. *Journal of Business Research*, *130*, 378-383.

Wang, T., Lin, X., & Sheng, F. (2022). Digital leadership and exploratory innovation: From the dual perspectives of strategic orientation and organizational culture. *Frontiers in Psychology*, *13*, 902693.

Wang, Y., Su, Z., Xu, Q., Li, R., & Luan, T. H. (2021, May). Lifesaving with RescueChain: Energy-efficient and partition-tolerant blockchain based secure information sharing for UAV-aided disaster rescue. In *IEEE INFOCOM 2021-IEEE Conference on Computer Communications* (pp. 1-10). IEEE.

Wong, B. (2023). Freezing Innovation: How the Platform Competition and Opportunity Act Will Freeze Funds in the Tech Start-Up Market. *Pepp. L. Rev.*, *50*, 399.

Wu, L., Lu, W., Zhao, R., Xu, J., Li, X., & Xue, F. (2022). Using blockchain to improve information sharing accuracy in the onsite assembly of modular construction. *Journal of Management in Engineering*, *38*(3), 04022014.

Wu, Q., Yan, D., & Umair, M. (2023). Assessing the role of competitive intelligence and practices of dynamic capabilities in business accommodation of SMEs. *Economic Analysis and Policy*, *77*, 1103-1114.

Ziakis, C., & Vlachopoulou, M. (2023). Artificial Intelligence in Digital Marketing: Insights from a Comprehensive Review. *Information*, *14*(12), 664.

Journal of Intelligence Studies in Business Vol. 14 No. 1 (2024) pp. 55–65
Open Access: Freely available at: http://jisib.com/

Cognitive and Psychological Obstructions to Information Quality in Competitive Intelligence

Laila Cekule*
University of Latvia, Latvia
laila.cekule@lu.lv

Andzela Veselova
University of Latvia, Latvia
andzela.veselova@lu.lv

Received 27 August 2024; accepted 3 October 2024

ABSTRACT Innovative Competitive Intelligence (CI) solutions prioritize unconventional methods to tackle emerging challenges faced by decision-makers, diverging from traditional information flow regulation. This study examines the cognitive and psychological barriers impacting the CI process in small and medium-sized enterprises, focusing on how factors such as perception, trust, and employee engagement influence information quality and CI effectiveness. By analyzing various companies, the study identifies that psychological aspects provide a nuanced understanding of information quality, considering both objective measures and subjective perceptions. Findings reveal that information quality is a subjective construct, shaped by cognitive and psychological factors, which vary among individuals. Recognizing these factors is essential for developing and curating information that meets quality expectations, thereby fostering trust and enhancing communication effectiveness. High-quality information perception can lead to superior decision-making and competitive advantage. The integration of psychological factors into information quality management is crucial for developing user-centered information systems, which improve decision-making, user engagement, and adaptability, while reducing cognitive overload and promoting trust. This comprehensive approach ensures that information systems align with users' natural processing and utilization of information, leading to improved outcomes. In small and medium-sized companies, where employees play a critical role in the initial and final stages of CI - identifying information needs and making decisions - the knowledge embedded in employees is a valuable yet underutilized resource. Through in-depth interviews, this qualitative study highlights the significance of addressing cognitive and psychological barriers to enhance CI processes, thereby optimizing information intelligence management and contributing to the economic development and sustainability of these companies.

KEYWORDS: competitive intelligence; business psychology; information quality; information quality management; decision making; human factors

INTRODUCTION

A company can only keep its competitive advantage for a limited period unless it continually enhances its positioning, marketing, and research more effectively than its competitors (Dacula & Gelacio, 2023). At the end of the 20th century, Porter developed a theory that provided a valuable framework for competitive analysis (Martin, 2002). Today, while the rapid increase in the volume of information is no longer surprising, the emphasis on information quality and its management has become

* *Corresponding author*

increasingly important. A company's competitive position becomes vulnerable when new competitors enter the market and offer similar products or services (Birkinshaw, 2022). Competitive Intelligence (CI) is a practical field focused on maintaining an accurate profile of an organization's current and potential competitors, customers, and suppliers, as well as their likely responses to perceived threats and opportunities. Companies can sustain their competitive advantage only for a limited period unless they continuously enhance their research and insights more effectively than their competitors.

The CI process is rarely a solo endeavor. “Analysts frequently work in groups or teams and benefit from the pooling of expertise” (Fleisher & Bensoussan, 2007). Typically, it involves teams working together to gather, analyze, and disseminate intelligence. Increasingly, companies are adopting various hybrid structures, such as project-based or matrix organizations. In these structures, employees from different organizational units collaborate, with participant selection based primarily on skills and competencies rather than the status in the organizational hierarchy (Cekuls, 2018). The human aspects of teamwork - such as trust, communication, and collaboration - are fundamental to the success of CI initiatives because they enable a more fluid and adaptive approach to problem-solving. In addition to these human factors, a hypothesis serves as a tool for thinking strategically about uncertainties and making sense of incomplete information, supporting effective decision-making (Cekuls, 2019a, Cekuls, 2019b). These hypotheses are not always formally developed, tested, or reformulated, instead, they are often adjusted in real time based on available evidence. In the context of CI, a hypothesis refers to a preliminary idea, assumption, or educated guess about a competitor's behavior, market dynamics, or future industry trends. Hypotheses are formulated based on available data and insights, guiding further research and analysis. Unlike in scientific research, where hypotheses are typically rigorously tested through controlled experiments, in CI, these assumptions are often more flexible and may be adjusted or refined in real-time as new information becomes available. This flexibility allows CI professionals to remain agile and responsive to changes in the competitive environment. Fleisher and Bensoussan, scientists in the field of CI, suggest that the adaptability in hypothesis formulation and adjustment reflects the fact that business and competitive analysis is more akin to social science than to physical or pure science (Fleisher & Bensoussan, 2007). It is a continuous process of asking and answering the "So What?" question, ensuring that the analysis remains relevant and actionable (Halliman, 2003).

PROBLEM STATEMENT

Competitive Intelligence is often linked with traditional forms of information services, which can diminish awareness of CI and reduce its role to mere tactical problem-solving. Observations suggest that in many organizations, employees primarily focus on collecting and distributing secondary information that supports traditional information services. This approach tends to be episodic and does not contribute effectively to early informational warnings. Employee knowledge is a crucial resource, especially during the initial stages of CI when an information need is identified and in the final stage when a decision is made (Frishammar, 2003). However, a key issue highlighted by researchers is that the knowledge residing in employees' minds is difficult to access and leverage.

Despite the growing role of Artificial Intelligence in generating information, employees remain the most important source of knowledge within a company, highlighting the value of human information over formal data. The routine extraction of large volumes of information can delay the recognition of critical trends, leading organizations to prioritize short-term tasks over long-term goals. This approach involves classifying needs and determining standard programs of action suited for immediate requirements. While such solutions may be effective in stable environments, modern organizations operate in rapidly changing contexts.

The quality of information is influenced not only by its source, accuracy, and timeliness but also by how it is perceived, interpreted, and utilized by employees and

managers. In a dynamic environment, the quality of information is crucial for decision-making, as it significantly impacts outcomes. Therefore, organizations must establish and adhere to information quality management principles to ensure reliable information at all levels of management (Rezaei et al., 2016).

Information is data that has meaning and shows how things are connected and consistent. In a capitalist economy, information is valued only when it can be used and sold or when it doesn't interfere with business costs (Mihajlović & Stanisavljević, 2022). Every day, business faces new challenges and changes. Success comes only if organization have enough information and persistence to overcome these obstacles and solve problems. Information quality is crucial in various domains to ensure that the information being used is accurate, reliable, and useful. However, an often-overlooked aspect of Information quality management is the influence of cognitive and psychological factors on how information is processed, assessed, and managed. Information quality is defined as the suitability of information for a specific purpose. It must be accurate, timely, complete, and reliable (Charantimath, 2022). In an organizational setting, confirmation bias can result in the selective gathering and interpretation of data, thereby compromising information quality. Information is valuable only if it meets the user's requirements and needs within a given context. To ensure such quality, company management must implement effective information quality management practices. By acquiring and validating information, organizations can develop new strategies, enhance processes, identify strengths, spot opportunities, and drive innovation.

While most data collected within an organization is valid, managing it can be challenging. Effective information management requires not only technological solutions but also an understanding of the cognitive and psychological factors that influence individuals' attitudes toward information. Since employees are the primary carriers and users of this information, addressing these factors is crucial for successful information management.

LITERATURE REVIEW

The synergy of psychological constructs and quality of information

Quality information is essential for making informed decisions, improving operational efficiency, and ensuring customer satisfaction. However, the quality of information and knowledge creation are influenced by psychological and cognitive factors that affect how individuals perceive, use, and manage information (Gilbreth, 2010).

Trust, motivation, cognitive load, and social factors are crucial elements to consider when designing and implementing information quality management systems. Organizations must focus on enhancing these aspects to ensure that decision-makers have access to high-quality information for effective decision-making. Effective leaders work hard to build teams and a corporate culture of inquiry, critical thinking and learning based on valid intelligence and counterintelligence. The goal is for intelligence to become second nature to policy formulation, decision-making and day-to-day operations (Martin, 2002).

To effectively navigate the maze of opportunities and risks and to use information for informed decision-making, organizations must continually improve their tools, processes, and technologies. Ensuring that the information used for CI is of high quality and useful for decision-making is crucial. Information quality management is an essential component for companies, as it ensures that all available information meets established quality criteria (Segoro & Sari, 2017). This management includes processes (such as data entry control and data integration), policies (such as data access rights and data management), and technologies designed to maintain and enhance the accuracy, timeliness, completeness, and reliability of information (Mendes & Jesus, 2018).

Scientists argue that organizations today must excel in communication management, risk management, and advanced technologies. Additionally, their members need to be free from paradigm traps and well-versed in the economic, political, religious, ideological, psychosocial, and cultural contexts of their target audiences (Martin, 2002). The challenges in delivering CI are complex, as CI professionals must evaluate and aggregate large volumes of information amidst an uncertain information flow. The rapid progress and intensity of science and technology intensify competition, highlighting the need for scientific analysis of this issue in both economics and psychology.

Cognitive and psychological aspects of information intelligence

Social and organizational factors, such as team dynamics, communication channels, and organizational culture, significantly influence information quality (Mas-Machuca et al., 2018). Today, information encompasses not only knowledge about products or services but also their emotional value and psychological aspects, which are challenging to define using specific criteria for information acquisition and analysis. Psychological aspects, such as perception and emotion, play a critical role in determining information quality. In the context of information overload and short attention spans, understanding the "invisible criteria" that affect information quality becomes strategically important. Krizan (1999) emphasizes that a company's informational needs, particularly when they are unique and urgent, must be interpreted or analyzed by CI specialists before being formulated into specific business information requirements.

The impact of personal beliefs on information interpretation

One of the most important factors in ensuring the quality of information is the perception of CI employees. Perception is a process in which individuals interpret and assign meaning to the quality of information based on perceptual selectivity. This means people tend to choose which information to accept and which to ignore, influenced by their prior beliefs and experiences (Malbašić et al., 2016). Individuals often search for, interpret, and remember information in ways that confirm their existing beliefs or decisions while ignoring or dismissing conflicting information. For example, if an information seeker has strong preconceptions about a particular event or phenomenon, they are more likely to focus on positive information and disregard negative information. Research shows that people prefer information that aligns with their prior beliefs and tend to overlook evidence that contradicts them (Lim et al., 2020). This selective perception can lead to a misjudgment of situations, as critical information inconsistent with existing beliefs may be ignored. Conversely, in cases of overconfidence, individuals may overestimate their ability to evaluate and interpret information, leading to an unreasonably high reliance on the obtained information, even if it is incomplete or inaccurate.

Employees sometimes perceive and use information to align with their personal or organizational interests and goals. This can result in important information being ignored or altered to fit predetermined outcomes (Matteucci, 2023). Similarly, the beliefs or values of the information user may conflict with the information received, causing critical competitive information to be misinterpreted or ignored. In such cases, the individual may experience discomfort and attempt to alleviate this tension by adjusting their perception of the information's quality. An employee's or manager's emotional state can also affect how they perceive and interpret information. For instance, stress or fear may cause them to focus on negative aspects, leading to exaggerated risk assessments or unnecessary concerns (Savioni et al., 2022).

Building trust for better information

Trust is a key psychological aspect of information quality management (Shuck et al., 2014). The results achieved by CI professionals largely depend on how much they trust their information sources. It is essential for ensuring the effectiveness of the CI process. When information sources are

perceived as reliable, employees are more likely to accept and use this information in their work. Research (Muhammad et al., 2021) has shown that a higher degree of trust between the source of information and the recipient significantly improves the perception and credibility of the information. When employees trust the source, they are more likely to consider the information as high-quality and reliable. This study demonstrates that trust in information sources not only enhances information perception but also leads to more effective information quality management within organizations.

Mutual trust among team members is also a crucial aspect of information quality management. Organizations with a high degree of trust between employees are better at ensuring the accuracy, timeliness, and relevance of information. However, researchers (Muhammad et al., 2021) caution that excessive trust can lead to biased information and decision-making. Therefore, it is important to maintain a balance between trust and critical thinking in managing information quality. This balance is a significant challenge for CI professionals, as it is essential to remain focused and communicate findings effectively to management, turning complex data into actionable insights. For a long time, researchers in the field of CI have emphasized that CI specialists must be well-trained to ensure an effective CI process, given the strategic importance of CI and its close connection to strategic decision-makers (Calof & Breakspeare, 1999).

The significance of trust in information management is further highlighted by studies showing that employees who trust the information provided by management are more inclined to use that information in their decision-making processes (McKnight, 2002). This finding underscores the critical role of trust in ensuring a smooth flow of high-quality information within organizations. Thus, building and maintaining trust, while avoiding the risks of over-reliance, is crucial for leveraging information as a strategic asset.

The level of employee involvement in an organization is another crucial factor that impacts the quality of the information obtained. Motivated employees are more likely to provide high-quality information and take an active role in maintaining it (Castelairo & Mendes, 2022). Motivation significantly influences how carefully individuals consider the quality of information. When employees are motivated and understand how quality information can improve their work and help achieve company goals, they are more attentive to the accuracy and completeness of the information (Dale et al., 2016).

The importance of reducing cognitive overload in CI

One of the most critical aspects of information quality management today is cognitive overload. Studies (Mendes et al., 2015; Shahrzadi et al., 2024) show that high cognitive load can lead to problems in information processing and result in errors, as exposing individuals to an excessive amount of information impairs their ability to make thoughtful and rational decisions. A large volume of information can lead to "paralysis in the analysis of information," where individuals either avoid making decisions or make poorly informed decisions because they feel overwhelmed (Shahrzadi et al., 2024). Information overload can strain individuals' cognitive capacity, making it difficult to distinguish between important and unimportant information for effective decision-making. However, a significant conclusion from the research is that while information overload increases cognitive load, high-quality information can mitigate this effect, even when large volumes of information are involved (Shahrzadi et al., 2024).

Organizations must ensure that their information systems are user-friendly and do not impose an excessive cognitive load. When information is clear, organized, and easily accessible, the decision-making process becomes more efficient. Conversely, complex and difficult-to-use information systems increase cognitive load and reduce the quality of information.

To enhance the perception and trust of information, companies should provide regular training for employees on the reliability of information sources, the importance of information quality, and effective management methods. This would

improve employees' skills in using information and foster critical thinking. Additionally, to build trust in information, companies should cultivate a culture of transparent communication, which includes open discussions about information sources, data collection methods, and quality control procedures.

When a company operates in a highly competitive industry with intensive implementation of innovative solutions and short deadlines for updating technical solutions, the CI team often experiences high information overload. Consequently, organizational management may quickly lose interest in the information provided. As a result, CI staff can become burdened with routine information tasks. Each situation, therefore, requires a unique interpretation and a tailored synthesis of the issues. In a negative scenario, avoiding the formalization and standardization of CI procedures and the information provided will become increasingly challenging.

Research on information overload in CI teams indicates that this issue is especially relevant in dynamic industries characterized by rapid innovation and technological changes. For instance, a study by Sun et al. (2023) on competitiveness in the digital age highlights that information overload can significantly impede effective information processing, particularly in the manufacturing and technology sectors, where the continuous influx of new data makes it challenging for teams to make optimal decisions. The Organization for Economic Co-operation and Development (OECD) also underscores that cognitive capacity limitations caused by information overload can lead to errors in information analysis and evaluation (Wang, 2020). Today, the role of artificial intelligence is being explored as a potential solution to mitigate the negative effects of information overload on CI teams.

As information evolves rapidly, particularly in high-tech industries, relying on previous needs assessments and standard solutions is no longer sufficient. Instead, a dynamic exchange of information is necessary. By considering the limitations of human perception, organizations can work to improve information quality and support better decision-making. Utilizing feedback mechanisms and trust-building strategies can help organizations effectively manage the psychological and cognitive factors impacting the CI process.

METHODOLOGY

The study focused on the cognitive and psychological barriers influencing the CI process (determining needs, collect and process data, analyze, disseminate intelligence, evaluate and control) by analyzing the situation in medium-sized companies. Small and medium-sized enterprises with 51-200 employees play a crucial role in the economic development of the country, contribute substantially to the creation of gross domestic product, and support employment. These companies are the main engine of the economy. Therefore, it is important to understand how information intelligence is managed in these companies. The topic under investigation (understanding competition, business information, etc.) is considered highly confidential among entrepreneurs and is closely related to the fundamental principles of organizational ethics. The purpose of the study is to understand the nature of the problem being investigated, rather than its numerical magnitude. To gather insights into the cognitive and psychological barriers influencing the CI process in medium-sized companies, the study utilized in-depth interviews. This qualitative method was chosen because it is particularly effective for exploring sensitive topics, such as those related to competitive intelligence and business information, which are often considered highly confidential by entrepreneurs. Information about the interview participants is summarized in Table 1.

Table 1. Informative description of interviewees

Interview's no.	Size of the company	Industry
Interview no. 1	small and medium	Health Care
Interview no. 2	small and medium	Transportation
Interview no. 3	small and medium	Health Care
Interview no. 4	small and medium	Logistics
Interview no. 5	small and medium	Retail Trade
Interview no. 6	small and medium	Transportation
Interview no. 7	small and medium	Wholesale

Data according to authors' research

Participants were carefully selected from a variety of industry sectors, including transportation, retail trade, and logistics, to ensure a diverse range of perspectives. The interviews were conducted in a one-on-one setting to provide a safe space for participants to share their experiences and insights openly. Open-ended questions were used to encourage detailed responses, allowing participants to discuss their experiences with the CI process, including how they determine needs, collect and process data, analyze information, disseminate intelligence, and evaluate and control the process. Once all interviews were conducted, content analysis was applied to the data. This involved extracting content units, categorizing the data, and defining key concepts related to the CI process. The content analysis aimed to identify common themes and patterns in the participants' responses, providing a deeper understanding of the barriers to effective CI in medium-sized companies. By using this approach, the study aimed to uncover valuable insights into the management of competitive intelligence within SMEs, focusing on understanding the qualitative aspects of the problem rather than merely measuring its prevalence.

RESULTS AND DISCUSSION

The performance of CI professionals is influenced by several key factors, particularly those related to social and organizational dynamics and psychological aspects. Effective collaboration and interactions within teams can enhance the quality of information shared and utilized. Clear and effective communication channels help in the timely and accurate dissemination of information. While trust is essential for effective information flow and acceptance, CI professionals must maintain a critical stance to avoid biases and ensure objective analysis. While trust is essential for effective information flow and acceptance, CI professionals must maintain a critical stance to avoid biases and ensure objective analysis. In the face of information overload and short attention spans, CI professionals need to identify the "invisible criteria" that affect information quality. This involves understanding the subtle, often unspoken factors that influence how information is perceived and utilized. Several statements explain a common cognitive bias known as "cognitive dissonance." This occurs when an individual encounters information that conflicts with their existing beliefs or assumptions. To reduce the discomfort caused by this contradiction, the person might question the accuracy of the new data or find justifications that align the new information with their existing beliefs. Individuals interpret and assign meaning to the quality of information based on selective perception, meaning they filter and prioritize information in ways that align with their existing beliefs and expectations. The results of the interviews revealed factors related to the cognitive and psychological barriers to information intelligence (Table 2).

Table 2. Interviews analysis

Content unit	Category	Concept
if the employee receives data that contradicts his assumptions, he may question the accuracy of this data or seek excuses to reduce the discomfort caused by the discrepancy between his assumptions and the information received	- intrapersonal contradictions - internal discomfort - cognitive dissonance	the role of perception in the stage of dissemination of results
the individual interprets and assigns meaning to the quality of information based on the selectivity of perception	- selectivity of perception - quality of information - interpretation of information	- the role of perception in the data collection stage - the importance of trusting information sources at the stage of data collection - the role of collaboration in the data collection stage
when sources of information are perceived as reliable, employees are more inclined to accept and use this information in their work	- reliability of sources - mutual trust - level of employee - involvement in the organization	- the role of mutual trust and confidence in the quality of information in all stages of CI
high information overload can lead to loss of interest	- cognitive load - perception	- data collection - data analysis - evaluation - results dissemination stage
mostly fragmented information is obtained	- selectivity of perception - quality of information - interpretation of information - confidence in the quality of information - cognitive load	- the role of perception in the data - collection stage - the importance of trusting information sources at the stage of data collection - the role of collaboration in the data collection stage
it takes someone who knows the situation and can interpret the information and integrate it into a coherent whole to make informed decisions	- selectivity of perception - quality of information - interpretation of information	- defining needs - data analysis stage - evaluation stage
information analysis is usually done by interpreting data from the general to the specific	- selectivity of perception - quality of information - confidence in the quality of information	- data analysis stage - evaluation stage - results dissemination stage
information often changes in real time	- quality of information - interpretation of information - cognitive load	- defining needs - competitive analysis planning - data collection stage
secondary information that supports traditional forms of information extraction is often collected and disseminated	- quality of information - interpretation of information - mutual trust - confidence in the quality of information	- competitive analysis planning - data collection
the quality of information is critical to decision making in a dynamic environment as it affects the outcome of decisions	- quality of information - interpretation of information - mutual trust - confidence in the quality of information	- defining needs - competitive analysis planning
cognitive overload can lead to stress, errors, decreased productivity, and impaired decision-making; the vast amount of data available from various sources - social media, market reports, news articles, competitor websites, and more - can be overwhelming. Filtering and processing relevant information can become challenging, leading to cognitive strain	- quality of information - interpretation of information - cognitive load	- data collection - data analysis - evaluation - results dissemination stage
information quality is defined as the appropriateness of the information for the specific purpose, it must be accurate, timely, complete and reliable	- quality of information - confidence in the quality of information	- defining needs

Data according to authors' research

In small and medium-sized companies, where employees play a critical role in the initial and final stages of CI - identifying information needs and making decisions - the knowledge embedded in employees is a valuable yet underutilized resource. CI professionals must work under conditions of high cognitive load, which is supplemented by the psychological aspects of work specificity. They frequently juggle multiple tasks, such as monitoring competitors, analyzing market trends, and reporting findings. This multitasking can divide attention and increase the cognitive load, reducing overall effectiveness. Additionally, many statements highlight the importance of perceived reliability in information sources. From the problems listed by respondents at the interviews, the following main problems were selected: (1) Information overload and attention span; (2) Balancing trust and critical thinking; (3) Psychological aspects of information quality; (4) Organizational factors. Psychological and cognitive aspects provide a comprehensive approach to evaluating information quality, focusing not just on objective measures, but also on how users perceive, trust, and interact with the information.

CONCLUSIONS

The CI process involves not only understanding the current state of the market but also anticipating future trends and disruptions. Therefore, CI is characterized by strategic foresight. In the face of information overload and short attention spans, CI professionals need to identify the "invisible criteria" that affect information quality. This involves understanding the subtle, often unspoken factors that influence how information is perceived and utilized. Effective CI involves scenario thinking, considering various possible futures. It helps eliminate scenario fragmentation, which is often a result of traditional information extraction methods that provide fragmented insights. For an organization to grow and develop, it is essential to interpret the gathered information and integrate it into a coherent whole. CI specialists must interpret the company's informational needs before these are formally articulated. This proactive approach helps in identifying unique and urgent information requirements effectively. However, research analysis shows that small and medium-sized companies often reject the opportunity to invest in CI development, opting instead for traditional methods of information acquisition. Employees tend to prioritize readily available information, even if it lacks comprehensiveness. This approach can result in information collection driven more by simplicity and convenience than by data quality. To address this information chaos, organizations need to develop robust and persistent CI skills. Continuous training for CI professionals is crucial, as CI has strategic importance and is closely tied to decision-making processes. Professionals must be equipped with skills to handle complex data and convert it into actionable insights.

To maintain competitiveness and help organizations model future events based on the analysis of past and current events, simply obtaining information is not enough. CI professionals must also develop cognitive abilities to effectively perceive information, manage cognitive load, and interpret data from the general to the specific in a focused manner. Reducing cognitive overload in competitive intelligence is essential for maintaining high-quality decision-making, efficiency, and employee well-being. To ensure effective competitive intelligence and safeguard the well-being of professionals, organizations must implement strategies to reduce cognitive overload. For example, prioritizing Information. Organizations should establish clear criteria for what information is most relevant to their strategic objectives. By focusing on key metrics and indicators, CI professionals can filter out noise and concentrate on valuable insights. This involves setting clear objectives for what the CI effort aims to achieve and aligning data collection with those goals. Establishing a structured CI

process with clear steps for data collection, analysis, and reporting can help manage cognitive load. Essentially, a CI professional bridges the gap between large volumes of information and targeted, future-focused solutions.

REFERENCES

Birkinshaw, J. (2022). How incumbents survive and thrive. Harvard Business Review, 100(1), 36-42.

Calof J., Breakspeare A. Competitive intelligence practices of Canadian technology firms// National Research Council, Canadian Institute of Scientific and Technical Information. Working paper. Ottawa, 1999.

Casteleiro, C., Mendes, L. (2022). Exploring the influence of quality management systems in work engagement and psychological empowerment in private institutions of social solidarity. Total quality management 33 (3), 243–277.

Cekuls A.. (2018). The problematic of social issues and environmental. International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM, 18(5.3), 927–934.

Cekuls A.. (2019). Incentives affecting business students wish to start business. International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM, 19(5.4), 177–182.

Cekuls A.. (2019). Synthesizing the understanding of sart-up from different perspectives in business learning process at university. IMCIC 2019 - 10th International Multi-Conference on Complexity, Informatics and Cybernetics, Proceedings, 2, 137–140.

Charantimath, P M. (2022). Total quality management. Pearson education; 4th Ed., p.16.

Dacula, J. C. Jr., & Gelacio, B. A. M. (2023). Application of Porter's Five Forces in assessing the competitive advantage of the motorcycle industry. Psychology and Education Journal, 14, 213-219.

Dale, B. G., Bamford, D., Van der Wiele. (2016). Managing quality: an essential guide and resource gateway. Wiley 6th Ed., 352 p.

Fleisher, C. S., & Bensoussan, B. E. (2007). Business and competitive analysis: Effective application of new and classic methods. FT Press.

Gilbreth, L. M. (2010). The psychology of management: the function of the mind in determining, teaching, and installing methods of least waste. Kessinger publishing, 354 p.

Halliman, C. (2001). Business Intelligence Using Smart Techniques: Environmental Scanning Using Text Mining and Competitor Analysis Using Scenarios and Manual Simulation (1st ed.). Houston: Information Uncover. ISBN 0-9674906-2-6.

Kakinohana, R.K., Pilati, R. (2023). Differences in decisions affected by cognitive biases: examining human values, need for cognition, and numeracy. Psicologia: Reflexão e Crítica . 36 (26), 1-12.

Krizan, L. (1999). Intelligence essentials for everyone. Joint Military Intelligence College.

Lim, D.H., Yoon, S.W., Cho, D. (2020). Confirmation bias and irrational decision-making: implications for HRD in South Korea and other countries. Publ. Springer Nature. 235–259

Malbašić, I., Marimon, F., Mas-Machuca, M. (2016). Is it worth having focused values? Management Decision, 54(10), 2370–2392.

Martin, A. P. (2002). Harnessing the power of intelligence, counterintelligence & surprise events. Professional Development Institute Press.

Mas-Machuca, M., Akhmedova, A., Marimon, F. (2018). Quality management: a compulsory requirement to achieve effectiveness. Total quality management & business excellence, 32(13), 1-20.

Matteucci, G., Guyoton, M., Auffret, M., Georgios Foustoukos, Petersen, C. C. H., El-Boustani, S. (2023). Cortical

sensory processing across motivational states during goal-directed behavior. Neuron 110, 4176–4193.

McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and validating trust measures for e-commerce: An integrative typology. Information Systems Research, 13(3), 334-359.

Mendes, L., Jesus, J. (2018). Influence of total quality-based human issues on organisational com-mitment. Total quality management & business excellence, 29(3-4), 260–286.

Mendes, L., Andrade, J., Lourenço, L. (2015). Perceived psychological empowerment and TQM-based Quality management systems: an exploratory research. Total quality management & business excellence, 28(1-2), 76-87.

Mihajlović, L. S., & Stanisavljević, B. (2022). Knowledge and lifelong education as a factor in the competitiveness of entrepreneurship. Knowledge: International Journal, 54(2), 321-326.

Muhammad A., S., Doe J., Smith, J. (2021). The Role of Trust in Information Quality Management: a psychological perspective. Journal of information quality and management, 5 (3), 45-62.

Rezaei, G., Mardani, A., Senin, A. A., Wong, K. Y., Sadeghi, L., Najmi, M., Shaharoun, A. M. (2016). Relationship between culture of excellence and organisational performance in Iranian manufacturing companies. Total quality management & business excellence, 1-22.

Savioni, L., Triberti, S., Durosini, I., Pravettoni, G. (2022). How to make big decisions: a cross-sectional study on the decision making process in life choices. Journal of current psychology, 42(18), 23 -33.

Segoro, W., Sari, M. P. (2017). The influence of ISO 9001 quality management system and corporate culture implementation on competitive advantage to improve company performance. International journal of economic research, 14(12), 423–429.

Shahrzadi L., Mansouri A., Alavi M., Shabani A.(2024). Causes, consequences, and strategies to deal with information overload: A scoping review. International Journal of Information Management Data Insights, 4 (2), 1-12.

Shuck, A. (2014). Human resource development practices and employee engagement: Examining the connection with employee turnover intentions. Human resource development quarterly, 25(2), 239–270.

Wang K. (2020). Can AI combat cognitive capacity issues and information overload? retrieved August 11, 2024 https://oecd.ai/en/wonk/can-ai-combat-the-cognitive-capacity-issues-related-to-information-overload