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Exploring competitive intelligence through the lens of managerial openness: a literature review and future research agenda

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Résumé :

Afin de maintenir leur compétitivité dans un environnement dynamique, les organisations sont tenues d'adopter une approche stratégique de l'exploitation des informations sensibles, ce qui relève pleinement du champ de l'intelligence économique. Étant donné qu'actuellement, l'élaboration des stratégies tend vers une plus grande ouverture, nous nous interrogeons sur la possibilité que les pratiques de l'intelligence économique aient également suivi cette même tendance au fil du temps. À notre connaissance, aucune revue systématique de la littérature examinant les pratiques d'intelligence économique sous l'angle de l'ouverture n'a été identifiée. Ainsi, en analysant 53 articles, le présent papier tente d'explorer dans quelle mesure les trois composantes de l'intelligence économique se sont ouvertes à l'environnement externe et interne de l'entreprise. Nos résultats révèlent que les pratiques de l'intelligence économique sont à la fois axées sur le contenu et sur les personnes lorsqu'il s'agit d'évaluer leur ouverture. Ce papier offre donc des éclairages quant à la manière dont les chercheurs ont appréhendé les caractéristiques d'ouverture dans le contexte de l'intelligence économique, ouvrant ainsi de nouvelles voies pour des recherches ultérieures.

Mots-clés : Intelligence économique, veille, influence, protection de l'information, ouverture.

Abstract :

To remain competitive in today's dynamic business environment, organizations are required to develop strategic use of sensible information, which is the role of competitive intelligence. As strategy-making embraces greater openness, we question, if competitive intelligence has experienced that same trend over the years. To the best of our knowledge, there exists no systematic literature review (SLR) addressing competitive intelligence practices through the prism of openness. Through analyzing 53 papers, this paper attempts to explore to what extent the three facets of competitive intelligence opened up to the external and internal environment of the company. Therefore, a four-dimensional framework of openness has been developed. It considers content-oriented and people-oriented openness along with outward-facing and inward-facing openness. Our findings reveal that competitive intelligence practices are both content- and people-oriented when it comes to assessing their openness, with a particular emphasis on monitoring practices. This SLR offers valuable insights on the way researchers have identified with the openness characteristics and competitive intelligence and provides new avenues for further research.

Keywords : Competitive intelligence, monitoring, lobbying, knowledge protection, openness.

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INTRODUCTION

In an era where the only constant is change, several factors have reshaped the dynamics of the business landscape. With the rapid advancement of technology, the digital revolution, the rise of online communities, and more specifically, the unprecedented flow of data, it appears that intellectual capital is the most strategic intangible asset for organizations, and the business value construction process depends mainly on its management (Saltos-Cruz et al., 2023). The development and capitalization of knowledge have been defining features of economic development in the last few decades (Bilan et al., 2023). In fact, organizations are operating in an increasingly complex environment that requires the intensive use of high-value data and information in their processes, products, services, and technologies (López-Robles et al., 2020). In such a context, firms are witnessing an unprecedented disruption in their competitive factors, where price competitiveness is no longer enough to increase market shares. It's the ability to identify, interpret, and use information that represents a key aspect of competitiveness (El Haddani & Baulant, 2016). Accordingly, implementing a set of information management practices such as competitive intelligence becomes crucial to leveraging their intellectual assets and inform decision-making. Competitive intelligence consists of collecting competitive information on products, prices, and market decisions in order to inform business decisions and enhance firms' ability to rapidly adapt to environmental changes (Vieira et al., 2023a). Meanwhile, the business world is increasingly experiencing the development of the openness

paradigm, which is reflected in a number of corporate functions and activities, and that is based on collaboration and sharing. It is therefore particularly crucial to examine the extent to which companies are integrating the imperatives of openness with their competitive intelligence practices. In the context of this paper, we adopt the definition of openness put forth by McCarthy and Keller (2022), which states that it refers to the degree to which managers and leaders within an organization are receptive to suggestions and input from employees. It fosters a culture of transparency, collaboration, and learning, where decisions are made based on open dialogue. We have also expanded this definition to consider external stakeholders in the environment and have identified four dimensions of openness: Content oriented openness, people-oriented openness, along with outward-facing and inward-facing openness.

Since the review of the literature indicated that no previous research was conducted in this sense, we are addressing this gap by performing a systematic literature review (SLR) to provide a more comprehensive understanding of competitive intelligence practices from an openness perspective. Through an in-depth analysis of 53 articles, we contextualize competitive intelligence practices by shedding light on the different orientations of openness that are associated with them, along with the openness directions, whether it's outward-facing openness or inward-facing openness, in regard to the dynamics of both organizational and management team boundaries. The remaining sections of the paper are structured as follows: Section 2 offers an overview of competitive intelligence and the openness paradigm. Section 3 highlights the methodology adopted in this review. Section 4 presents the results, and the next section describes avenues for future research.

1. RESEARCH FRAMEWORK

In this review, we analyze competitive intelligence practices through the prism of managerial openness within organizational contexts. As defined in the literature, competitive intelligence consists of collecting information on products, prices, and market decisions in order to inform

business decisions and enhance firms' ability to rapidly adapt to environmental changes (Vieira et al., 2023a). Its aim is to keep the company constantly informed of technological, political, economic, legal, and social changes likely to have an impact on its competitive position (Blondel et al., 2007). It is the company's mechanism to convert strategic information into practical actions (Al Daabseh et al., 2023). Competitive intelligence has three components namely, monitoring, influence, and information protection. The first one refers to the ability to capture key information about the company's environment and process it in order to maintain the organization's ability to anticipate, adapt, and support the decision-making process through the early detection of information that is a source of opportunities or threats (Chalus-Sauvannet, 2021). Competitive intelligence combines monitoring practices with more proactive actions on the organization's information environment through the development of its second component, lobbying. It corresponds to an "off-market" strategy that aims to condition the perception of the company's wider environment in a way that is favorable to it, including public decision – makers (Harriet, 2023). The third component concerns information protection. In this context, competitive intelligence takes the form of a mode of governance designed to protect the company's strategic information from both internal and external acts of negligence (Monino, 2013) and prevent the dissemination of unwanted information by the company through the implementation of management or legal tools (Harriet, 2023).

As for openness, it has become an increasingly widespread new form of organizing due to the development of new technologies, since technology plays a key role both in terms of the people included and the scope of information shared (Holstein & Rantakari, 2023a). In addition, the evolution of societal values towards democratization and liberalization, the expansion of social software that enables connectivity and community development, and the increase in complex problems that require the input of diverse viewpoints and collaboration have fostered the adoption of openness in many distinct areas of organizational activity (Splitter, Dobusch, et al.,

2023). As an organizational concept, openness refers to the extent to which processes and activities include external actors, it also implies a highly fluid interaction between technologies, people, and social action (Griffith et al., 2023) it is closely connected to the ideas of participation, transparency, and collaboration both inside and out-side organizations to increase knowledge and creativity (Holstein & Rantakari, 2023a). It has, therefore, become a critical strategic priority for many organizations, as it supports accountability, social inclusion, productivity, and the expansion of supply chains, and innovation (Faik et al., 2019).

2. METHODOLOGY

This study is built upon a systematic literature review, following the systematic process suggested by Gaur & Kumar (2018). In the current study, papers were extracted in November 2023 from Scopus and Web of Science databases using the keyword “competitive intelligence”. The choice of these two databases depends on several reasons. Firstly, the use of Scopus and Web of Science offers extensive publication metadata and bibliometric indicators, which ensure comprehensive coverage of the scientific literature across various disciplines. Secondly, both are widely recognized for their reliability. Moreover, using these two databases ensures the transparency and reproducibility of the search process.

The search was performed within the article titles, abstracts, and keywords, and was restricted to peer reviewed papers, available in English within the area “Business, Management and Accounting”. In addition, the search was limited to empirical papers in order to build our analysis on tangible results and evidence-based practices with the aim of enhancing the review relevance to practitioners. As for the time, only papers published between 1990 and 2023 were included. The reason for choosing this time period is the fact that competitive intelligence began to really take concrete form in the 90s with the publication of the Martre report, which marked its significant formalization. It’s a collective work that underlines the value of information, the goals of competitive intelligence for companies, and the need for an effective system to support

strategic decision-making (Saïd, 2006). Examining these three decades allows us to explore in depth practices during the pre-digital era, the technological revolution, as well as today's technological advancements, thus offering a contextualized vision of the evolution of this practice. On Scopus, our search resulted in 6823 papers, while 518 papers were identified from the Web of Science. Table 1 highlights the protocol adopted during the phase of database search.

Table 1. Database search protocol

Database	Scope	Date of search	Time horizon	Total number of articles	Total number of selected articles
Scopus	Title/abstract/keywords	November 2023	1990 - 2023	6823	899
Web of Science	Title/abstract/keywords	November 2023	1990 - 2023	518	176

The search initially resulted in 1075 papers. After removing 92 duplicate articles, we excluded papers that are published in journals that were not part of the Academic Journal Guide (AJG) ratings and those in 1 and 2 category journals of AJG. Therefore, a sample of 363 articles remained for further analysis.

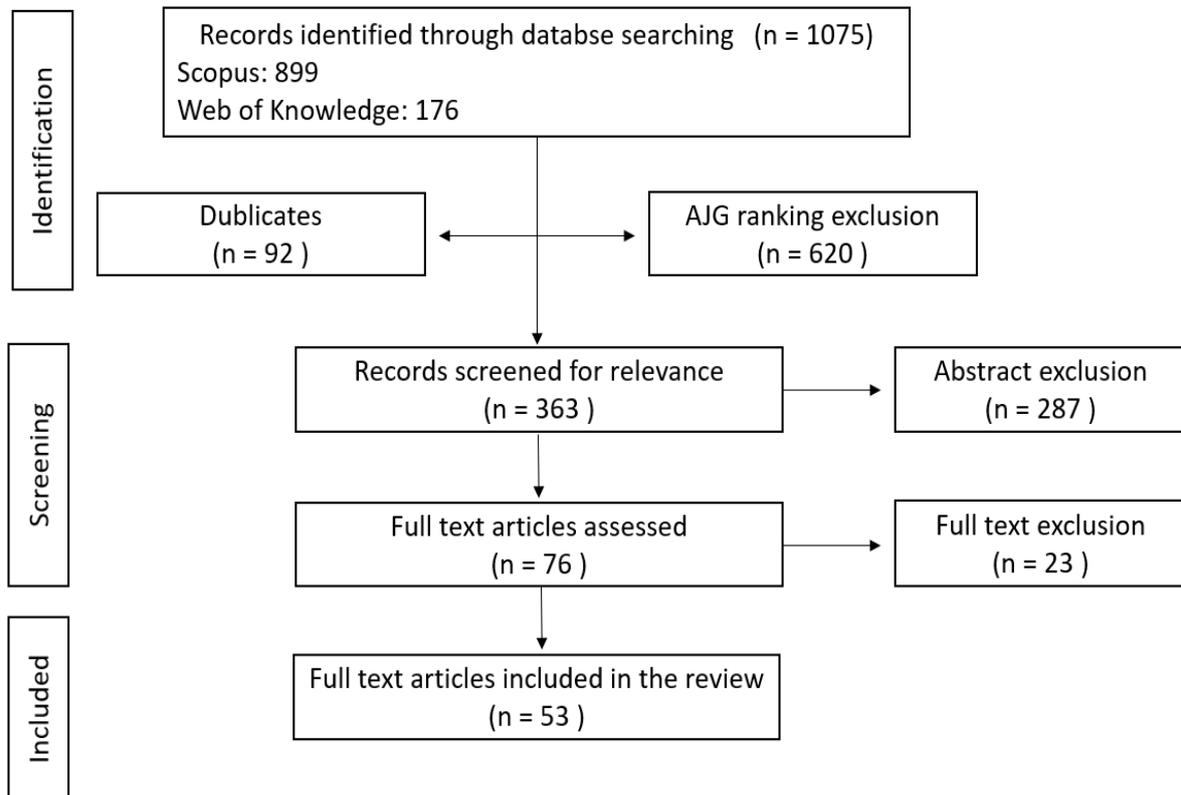
We manually screened the 363 papers based on their respective abstracts. Identifying each paper's central theme and key aspects gave us more visibility of the papers within the scope of interest for this review. Therefore, studies in fields such as business intelligence, business analytics, information systems, technology adoption, disruptive technologies, IT capabilities, software developments, artificial intelligence, military intelligence, innovation, sales management, operations management, supply chain management, business ethics, mergers and acquisitions were excluded. Table 2 gives an overview of the applied filters, and the inclusion and exclusion criteria.

Table 2. Database search protocol

Keyword	- “Competitive intelligence”
Search filters	<ul style="list-style-type: none"> - Timeframe: 1990 - 2023 - Subject area: Business, Management and Accounting - Document type: Article - Source type: Journal - Language: English - Journal quality: AJG ranking
Inclusion criteria	<ul style="list-style-type: none"> - Articles investigating competitive intelligence practices within companies. - Articles focused on the openness aspect of these practices. - Articles investigating tools and information management processes. - Articles focused on the human aspect of information practices. - Articles investigating the role of social media.
Exclusion criteria	<ul style="list-style-type: none"> - Articles focusing on technological tools and business intelligence. - Articles on military intelligence. - Articles not referring to competitive intelligence as a informational practice within the fields of innovation, sales management, operations management, supply chain management, business ethics, mergers and acquisitions. - Articles that don't cover information practices.

Therefore, our review finally comprised 76 papers that genuinely matched our focus area. Based on the full text screening, articles that did not address information practices were not considered, which led to the exclusion of 23 additional papers, resulting in a final sample of 53 papers. Figure 1 gives an overview of the entire research process. Regarding the analysis phase, we started by organizing the selected articles chronologically. Then, we developed a methodical reading grid so that each document is examined according to the same set of criteria, enabling a comprehensive and systematic analysis. In line with our definition to competitive intelligence components and the aim of the study, the coding scheme included the following elements: information practices, competitive intelligence components, openness orientations, orientation categories, and sub-categories. The following section the findings derived from this analysis are presented in the following section.

Figure 1. Research process



3. FINDINGS

This section is developed with the aim of shedding light on different aspects of openness within the three components of competitive intelligence, following the four-dimensional framework that has been developed. This latter considers two main orientations: content-oriented openness and people-oriented. The first one represents being open to the dynamic information landscape through a commitment to adopting a wide range of tools, sources, and types of information throughout the information management process. And the second one refers to collaboration among individuals. Additionally, our framework includes two directional dimensions, outward-facing and inward-facing, which highlight how openness flows within the organizational boundary and the one related to the management team. Having outlined the basis of our analytical framework, we will initiate the analysis phase by offering an overview of the

evolution of research that has pointed to the aspect of openness in the three components of competitive intelligence, summarizing the number of papers published over the time frame of our systematic review. Table 3 highlights the competitive intelligence components across openness dimensions over the time frame 1990 - 2023.

Table 3. Categorization of CI components under openness dimensions over the timeframe 1990 - 2023.

CI components	Openness dimensions	1990 - 1999	2000 - 2009	2010 - 2019	>2020	Total
Monitoring	Content	6	15	18	12	48
	People	1	4	7	3	15
Lobbying	Content	-	-	-	-	-
	People	-	1	-	1	2
Knowledge protection	Content	-	-	-	-	-
	People	2	-	2	-	4
Total		9	20	27	16	

From this table, we can see that previous research on competitive intelligence has mainly stressed on open monitoring practices. Lobbying and knowledge protection have either been excluded from competitive intelligence discipline or received little attention from an openness perspective.

3.1. MONITORING PRACTICES THROUGH THE PRISM OF OPENNESS.

The SLR sheds light on the different monitoring practices carried out by companies. The following table gives an overview of these practices.

Table 4. Exploring monitoring practices across openness orientations

Monitoring practices	Openness orientation	Orientation categories	Orientation sub-categories	Occurrence in literature	Openness assessment (outward-facing / inward-facing openness)
Collect accurate information on competitors	Content	Type of information	Information on competitors	40	Openness towards the external environment
Collect information on customers' thoughts toward the brand and the products	Content	Type of information	Information on customers	19	Openness towards the external environment
Continuous monitoring and scanning mechanism for market,	Content	Type of information	Market dynamics	7	Openness towards the external environment
Information is collected through new technologies	Content	Tools	Social media platforms, Google trends, prerelease online search traffic, Online customer reviews	5	Openness towards the external environment
Information is collected through a continuous scanning using the internet	Content	Tools	Internet	18	Openness towards the external environment
Information is collected through newspapers and data basis	Content	Tools	Regular source of information	6	Openness towards the external environment
Competitive information is gathered in a	People	Internal	Salespeople	2	Openness towards the

timely manner by salespeople					internal environment
Information is collected through interviews within the company	People	Internal	Employees	3	Openness towards the internal environment
Information is collected from business partners	People	External	Network	1	Openness towards the external environment
Data is collected, processed, disseminated, and transformed in collaboration with the companies' employees	People	Internal	Employees	12	Openness towards the internal environment
Data is collected by competitive intelligence specialists	People	Internal	Employees	2	Openness towards the internal environment
Frontline employees are both collectors and immediate users of the information gathered	People	Internal	Frontline employees	1	Openness towards the internal environment

The review of the literature on monitoring practices reveals a wide range of approaches. In their study, Lin et al. (2022) explained that when it comes to gathering data, firms open up their boundaries to inflows of knowledge from external sources with a focus on competitor-specific knowledge. For the authors, being open-minded to external knowledge, in a turbulent business landscape foster innovative output. As for the information sources mobilized, it includes google trends, publicly available pre-release online search traffic, social media analytics, online customer reviews and stars rating (Dhar & Bose, 2022; Hassani & Mosconi, 2022; Hu et al.,

2019; Köseoglu et al., 2021a; Schaer et al., 2022). For Köseoglu et al.(2016), who conducted a study among hotel firms, several hotel managers gather information about other hotels on an on-going basis via the internet, and by reading customer reviews of other hotels. In the same vein, Kalra et al., (2021) indicate that frontline employees gather and transmit reliable information on competitors, and are the immediate users of it. Based on different sources, this information allows them to shape their customer strategies. When it comes to dissemination, which is one of the key steps of the monitoring process, Hakmaoui et al. (2022) highlight that dissemination of information within the bank relates to both raw and elaborated information. It is mainly informal with no specific procedure or specific profiles prescribed for this dissemination process. In this context, openness is reflected in the commitment to exploring various sources of information beyond internal data. It includes social media platforms, customer reviews, competitor's report and publications, and according to Ndjock (2017), the diversity of sources means that information can be cross-referenced, compared and assessed for relevance. The extensive use of social media and online reviewing platforms is a practice that is strongly present in studies conducted recently (Hassani & Mosconi, 2022; Hu et al., 2019; Schaer et al., 2022), which implies a strong commitment to adapting and embracing new technologies. It should be also noted that in the study of Köseoglu et al. (2021), managers try to have an international mindset when collecting data. Instead of limiting their searches to local competitors and consuming trends they focus more on global trends to come up with new and innovative ideas. In this context, openness involves being attentive and receptive to diverse content from international sources which enhances the capability of the manager to gain a holistic understanding of the business landscape. As for the people orientation, it appears that data is collected by salespeople (Itani et al., 2020; Vieira et al., 2023a), and frontline employees (Kalra et al., 2021), while for others every single employee is involved (Lin et al., 2022), such as sales and marketing, human resources, general manager, front office, business development

(Köseoglu et al., 2021a). For Itani et al. (2020), a salesperson using social media can follow the updates of competitors' social media pages, customers communicating their perspectives about competitors' products, and other user-generated content concerning the competitive environment. In fact, Madureira et al. (2021) explain that the CI process is a series of activities that follow a procedure with certain characteristics and sub-processes. It is systematic – methodical, networked and, actionable. It includes defining intelligence needs and planning the intelligence project, gathering data, analyzing data, and disseminating intelligence. It is a collective exercise rather than an individual affair. Basing strategic decisions on data collected by less experienced salespeople showcases a high level of openness by including low level collaborators (Itani et al., 2020). It can be noted that in both openness orientations, monitoring practices are opened to both internal and external environments. From the content perspective, the SLR shed light on the fact that companies are opened to various types of information using various types of tools mainly disruptive technologies. On the other hand, the people-oriented perspective is closely linked to opening monitoring practices to internal employees for a more proactive approach in managing strategic data. Regarding monitoring practices, it appears that openness flows toward the external environment and extends beyond the organizational boundaries, which implies a commitment to moving away from closed and isolated approaches to collecting strategic information to more collaborative and inclusive practices such as actively seeking information on different business aspects from various partners using disruptive technologies and social media platforms. As for the managerial team boundary, it appears that monitoring practices are also opened internally, which means that they are not restricted to the executive team, yet employees are increasingly involved in the process (Itani et al., 2020; Kalra et al., 2021; Vieira et al., 2023a). Embracing openness beyond the organizational and top management boundaries when gathering information aligns with a strong commitment to

adopting a proactive approach, given the interconnectedness and dynamics of the current business landscape.

3.2. LOBBYING AND KNOWLEDGE PROTECTION PRACTICES THROUGH THE PRISM OF OPENNESS.

Out of 53 assessed papers, only 2 papers covered lobbying as an aspect of competitive intelligence (Kalra et al., 2021; Patton, 2005), and 4 others addressed knowledge protection, which is a very low proportion compared to monitoring. The following table present the practices identified.

Table 5. Exploring lobbying and knowledge protection practices across openness orientations.

Lobbying and knowledge protection practices	Openness orientation	Orientation categories	Orientation sub-categories	Occurrence in literature	Openness assessment (outward-facing / inward-facing openness)
Interpersonal networking sources	People	External	Network	2	Openness towards the external environment
Guarding information against a competitor's gathering activities	People	Internal	Involve employees in the protection measures	4	Openness towards the internal environment
Sign non-disclosure agreements with employees for dealing with confidential information	People	Internal	Involve employees in the protection measures	2	Openness towards the internal environment

As for lobbying, the second component of CI, it refers to the influence exerted by an organization on public decision-making to create or maintain a supportive operating

environment (Rival et al., 2013). In practice, Kalra et al. (2021) found that the competitors' information received from different sources helped frontline employees change customer behaviors, which indicates an openness to capitalize on the data collected to influence business dynamics. In practice, lobbying or influence is achieved through social media campaigns, public relations initiatives, donations, and memberships in non-profit organizations and industry groups. However, the only aspects which has been briefly discussed in the literature is networking (Köseoglu et al., 2021a; Madureira et al., 2021a; Patton, 2005). In fact, it can be considered as a tool of lobbying since developing connections in a strategic way with stakeholders involved in shaping policies fosters the influence of business environment trends and dynamics. In this context, openness is reflected in including many people in the collect and the proactive use of data which leads to a key aspect of openness: inclusion, a concept strongly present in the literature on open strategy and which is related, according to Hautz et al. (2017), to internal or external consultation.

Despite these emerging practices that were identified in the most recent papers which promote collaboration, inclusion, and sharing, competitive intelligence is considered a closed approach to collecting and analyzing strategic data on markets and competitors. In fact, its third component is about knowledge protection, which is essential for any company, especially at a time when knowledge is among the decisive factors of competitiveness (Damaisin d'Arès, 2016; Delbecque, 2006; Delbecque & Fayol, 2012; Larivet & Brouard, 2007; Rival et al., 2013). However, it should be noted that this aspect is missing in the most recent literature that mainly focuses on monitoring. Only papers published in the late nineties (Babbar & Rai, 1993; Hannon, 1997; McCrohan, 1998) highlight the necessity of protecting strategic knowledge from competitors. Since McCrohan (1998) came to the conclusion that most of the firms that do gather competitive intelligence, even fewer have formal procedures for guarding against a competitor's intelligence gathering activities, he suggested a few ways to enhance knowledge

protection including educating all their employees concerning the potential threats to the companies' proprietary information, determining what information to protect and at what level, limiting access for sensitive information, and signing non-disclosure agreements with employees. This aspect of competitive intelligence is strongly opposed to the concept of openness and falls within the scope of secrecy. In this context, it is important to consider how a closed approach that prioritizes exclusive information gathering as a means to maintain a competitive edge can be substantial for any company navigating today's business landscape where change is the only constant and openness is one of the main features of business interactions. Given this paradox, it is worth mentioning that companies are invited to start carefully selecting information that can be shared openly and the one that needs protection. Regarding the directional dimensions of openness, it appears that the lobbying practices mentioned in the literature, and in particular networking, are part of an initiative to overcome organizational barriers more than the top management barriers and thus reflect an openness to the external environment. On the other hand, strategic information protection practices reflect a commitment to overcome internal barriers linked to top management. Thus, employees are also solicited and deeply involved in the protection measures through signing non-disclosure agreements, for instance.

4. AVENUES FOR FUTURE RESEARCH

Based on our analysis, we have identified the following avenues for future research. First, we suggest that researchers interested in investigating competitive intelligence practices within companies expand their focus from monitoring practices to influence and information protection, which are the two other components where a lack of studies has been noticed. Regarding influence and lobbying, we encourage researchers to examine the way organizations engage in lobbying efforts to influence policies within an open context, identify the key success factors in measuring the effectiveness of open lobbying, and examine the impact of cultural

aspects on open lobbying practices across different countries. As for information protection, exploring implemented strategies to prevent knowledge leaks in the context of openness, as well as collaborative models required to preserve strategic knowledge within partnerships, could be particularly promising avenues for future research.

Secondly, the literature review revealed that many authors (Köseoglu et al., 2021b; Lin et al., 2022) have made recommendations to promote an organizational culture of collaboration and information sharing within companies. These recommendations point out that, despite the apparent commitment to openness in activities related to competitive intelligence, organizational and top management-related barriers persist. It is therefore imperative to carry out case studies across various industries on how to transcend these dual barriers in order to foster greater openness in competitive intelligence practices. Next, an opportune avenue for research would involve delving into the paradox of fostering openness within an organization and protecting sensitive data. In this sense, researchers are invited to examine the way companies balance the need to protect sensitive information when engaging in open collaborative initiatives and highlight the tensions associated with maintaining transparency and securing sensitive information.

Furthermore, it should be noted that the main feature of competitive intelligence is that it's a closed approach that prioritizes secrecy and exclusive information gathering as means to maintain a competitive edge. However, companies are operating in an era where the strategy-making process based on secrecy, in which top managers are exclusively in charge of establishing the direction of the firm while employees at the lower levels of the hierarchy are expected to implement these directions (Splitter, Jarzabkowski, et al., 2023), is not suitable to navigate the challenges and seize the opportunities of today's complex and evolving environment. Therefore, many organizations, such as Wikimedia, Google, and Leroy Merlin, have started to open up their strategy-making processes to wider stakeholders, including

employees and/or customers, as a way of overcoming the individualistic and secretive nature of the strategic summit (Nobre & Grandclaudé, 2021). This evolving aspect of strategy is referred to as open strategy (Whittington et al., 2011). According to Lundgren-Henriksson & Sorsa (2023), open strategizing emphasizes the importance of organizations actively involving a wider group of actors to highlight minority concerns and have an impact on strategy formulation. Open strategy can be illustrated through various actions, such as the transparent communication of the firm's strategy within public presentations, the voluntary disclosure of mergers and acquisitions, utilizing social software, and inviting wider internal and external audiences to participate in strategic decision-making (Gegenhuber & Dobusch, 2017). While competitive intelligence is considered a closed approach to collecting and analyzing strategic data on markets and competitors, open strategy promotes knowledge sharing and collaboration. Therefore, more empirical research is needed to examine how the open strategy paradigm shapes competitive intelligence strategies. In addition, our analysis reveals that disruptive technologies and social media platforms are increasingly present in contemporary research on competitive intelligence. Accordingly, future studies should embrace this aspect of technological advancements by linking it to the effectiveness and resilience of lobbying practices, protection measures, and monitoring processes within a context of openness, transparency, and inclusion.

5. CONCLUSION

Research on competitive intelligence has often focused on decision-making, strategy formulation, and information processes. To the best of our knowledge, no prior research has explicitly addressed competitive intelligence practices through the prism of openness, a new managerial paradigm that promotes transparency and collaboration both inside and outside organizations, even if these two notions are critical in today's dynamic business landscape. Drawing on previous empirical studies, a systematic literature review was conducted to

highlight the orientation of openness related to competitive intelligence practices. Based on well-structured, transparent, and replicable methods, we examined two databases and completed the screening process, ending up with 53 peer-reviewed papers for assessment. Our findings suggest that competitive intelligence practices are both content- and people-oriented when it comes to assessing their openness, with a particular emphasis on monitoring practices. This paper's findings have significant implications for practitioners in the fields of competitive intelligence, organizational management, and open strategizing. Shedding the light on the level of openness in competitive intelligence practices will help practitioners build transparency, promote a culture of collaboration, and foster trust among employees and stakeholders when managing information. As for scholars, this paper offers a new perspective on competitive intelligence practices, highlighting the importance of embracing openness in managing and leveraging information management. Therefore, scholars can build upon this research by further investigating the avenues mentioned earlier. Considering the limitations of this SLR, future research avenues can be outlined. First, we only selected two databases. Although Scopus and Web of Science include most peer-reviewed journals, some relevant publications may not be listed in them. In addition, we excluded papers published in journals that were not included in the AJG ranking, which can lead to a failure to take account of some relevant practices in the field of competitive intelligence.

References

- Abrahams, A. S., Jiao, J., Fan, W., Wang, G. A., & Zhang, Z. (2013). What's buzzing in the blizzard of buzz? Automotive component isolation in social media postings. *Decision Support Systems*, 55(4), 871-882. <https://doi.org/10.1016/j.dss.2012.12.023>
- Ahearne, M., Lam, S. K., Hayati, B., & Kraus, F. (2013). Intrafunctional Competitive Intelligence and Sales Performance: A Social Network Perspective. *Journal of Marketing*, 77(5), 37-56. <https://doi.org/10.1509/jm.11.0217>
- Al Daabseh, T. K. I., Bani-Hani, T., Aljawarneh, N. M., Alkufahy, A. M., Raqqad, R. A., & Albalawee, N. (2023). The Relationship Between Business Intelligence Capabilities and Business Outcomes of Small and Medium Sized Enterprises : The Moderating Role of Competitive Intelligence. *Journal of System and Management Sciences*, 13(4), 535-550. Scopus. <https://doi.org/10.33168/JSMS.2023.0432>
- Antunes, D., & Thomas, H. (2007). The Competitive (Dis)Advantages of European Business Schools. *Long Range Planning*, 40(3), 382-404. <https://doi.org/10.1016/j.lrp.2007.04.003>
- Babbar, S., & Rai, A. (1993). Competitive intelligence for international business. *Long Range Planning*, 26(3), 103-113. [https://doi.org/10.1016/0024-6301\(93\)90012-5](https://doi.org/10.1016/0024-6301(93)90012-5)
- Bernhardt, D. C. (1994). 'I want it fast, factual, actionable'—Tailoring competitive intelligence to executives' needs. *Long Range Planning*, 27(1), 12-24. [https://doi.org/10.1016/0024-6301\(94\)90003-5](https://doi.org/10.1016/0024-6301(94)90003-5)
- Bilan, Y., Oliinyk, O., Mishchuk, H., & Skare, M. (2023). Impact of information and communications technology on the development and use of knowledge. *Technological Forecasting and Social Change*, 191. Scopus. <https://doi.org/10.1016/j.techfore.2023.122519>
- Chalus-Sauvannet, M.-C. (2021). *Veille stratégique à l'usage des décideurs : Anticiper les opportunités pour conduire des stratégies innovantes*. EMS Editions. <https://international-scholarvox-com.ressources.um6p.ma/catalog/book/docid/88915193?searchterm=veille%20strat%C3%A9gique>
- Chau, M., & Xu, J. (2012). Business Intelligence in Blogs: Understanding Consumer Interactions and Communities. *MIS Quarterly*, 36(4), 1189-1216. <https://doi.org/10.2307/41703504>
- Chen, H., Chau, M., & Zeng, D. (2002). CI Spider: A tool for competitive intelligence on the Web. *Decision Support Systems*, 34(1), 1-17. [https://doi.org/10.1016/S0167-9236\(02\)00002-7](https://doi.org/10.1016/S0167-9236(02)00002-7)
- Choi, J., Oh, S., Yoon, J., Lee, J.-M., & Coh, B.-Y. (2020). Identification of time-evolving product opportunities via social media mining. *Technological Forecasting and Social Change*, 156, 120045. <https://doi.org/10.1016/j.techfore.2020.120045>
- Courseault Trumbach, C., Payne, D., & Kongthon, A. (2006). Technology mining for small firms : Knowledge prospecting for competitive advantage. *Technological Forecasting and Social Change*, 73(8), 937-949. <https://doi.org/10.1016/j.techfore.2006.05.018>

- Damaisin d'Arès, J.-C. D. (2016). *Intelligence économique et renseignement—Pour en finir avec les amalgames* (Illustrated édition). Editions JP Otelli.
- Delbecque, E. (2006). *L'intelligence économique : Une nouvelle culture pour un nouveau monde*. Presses Universitaires de France.
- Delbecque, E., & Fayol, J.-R. (2012). *Intelligence économique*. Vuibert.
- Dhar, S., & Bose, I. (2022). Walking on air or hopping mad? Understanding the impact of emotions, sentiments and reactions on ratings in online customer reviews of mobile apps. *Decision Support Systems*, 162, 113769. <https://doi.org/10.1016/j.dss.2022.113769>
- Dobusch, L., Dobusch, L., & Müller-Seitz, G. (2019). Closing for the Benefit of Openness? The case of Wikimedia's open strategy process. *Organization Studies*, 40(3), 343-370. <https://doi.org/10.1177/0170840617736930>
- El Haddani, M., & Baulant, C. (2016). *La progression quantitative et qualitative de l'information grise dans le cycle de la compétitivité des entreprises*. Colloque international (Recherche et Pratiques en Marketing et Communication), Kenitra.
- Erickson, G. S., & Rothberg, H. N. (2009). Intellectual capital in business-to-business markets. *Industrial Marketing Management*, 38(2), 159-165. <https://doi.org/10.1016/j.indmarman.2008.12.001>
- Faik, I., Thompson, M., & Walsham, G. (2019). Designing for ICT-enabled openness in bureaucratic organizations : Problematizing, shifting, and augmenting boundary work. *Journal of the Association for Information Systems*, 20(6), 681-701. Scopus. <https://doi.org/10.17705/1jais.00548>
- Gaur, A., & Kumar, M. (2018). A systematic approach to conducting review studies : An assessment of content analysis in 25years of IB research. *Journal of World Business*, 53(2), 280-289. <https://doi.org/10.1016/j.jwb.2017.11.003>
- Gegenhuber, T., & Dobusch, L. (2017). Making an Impression Through Openness : How Open Strategy-Making Practices Change in the Evolution of New Ventures. *Long Range Planning*, 50(3), 337-354. <https://doi.org/10.1016/j.lrp.2016.09.001>
- Gilad, B., Gordon, G., & Sudit, E. (1993). Identifying gaps and blind spots in competitive intelligence. *Long Range Planning*, 26(6), 107-113. [https://doi.org/10.1016/0024-6301\(93\)90212-X](https://doi.org/10.1016/0024-6301(93)90212-X)
- Griffith, T. L., Majchrzak, A., & Giustiniano, L. (2023). Hyperloop transportation technologies : Practices for open organizing across VUCA contexts. *Journal of Organization Design*, 12(3), 99-120. <https://doi.org/10.1007/s41469-023-00141-1>
- Gutt, D., Herrmann, P., & Rahman, M. S. (2019). Crowd-Driven Competitive Intelligence : Understanding the Relationship Between Local Market Competition and Online Rating Distributions. *Information Systems Research*. <https://doi.org/10.1287/isre.2019.0845>
- Hakmaoui, A., Oubrich, M., Calof, J., & El Ghazi, H. (2022). Towards an anticipatory system incorporating corporate foresight and competitive intelligence in creating knowledge : A longitudinal Moroccan bank case study. *Technological Forecasting and Social Change*, 174, 121139. <https://doi.org/10.1016/j.techfore.2021.121139>

- Hannon, J. M. (1997). Leveraging HRM to enrich competitive intelligence. *Human Resource Management*, 36(4), 409-422. [https://doi.org/10.1002/\(SICI\)1099-050X\(199724\)36:4<409::AID-HRM5>3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1099-050X(199724)36:4<409::AID-HRM5>3.0.CO;2-Z)
- Harriet, L. (2023). Perspectives pratiques de l'intelligence économique: *Question(s) de management*, n° 44(3), 37-46. <https://doi.org/10.3917/qdm.224.0037>
- Hassani, A., & Mosconi, E. (2022). Social media analytics, competitive intelligence, and dynamic capabilities in manufacturing SMEs. *Technological Forecasting and Social Change*, 175, 121416. <https://doi.org/10.1016/j.techfore.2021.121416>
- Hautz, J., Seidl, D., & Whittington, R. (2017). Open Strategy : Dimensions, Dilemmas, Dynamics. *Long Range Planning*, 50(3), 298-309. <https://doi.org/10.1016/j.lrp.2016.12.001>
- Hawkins, T. G., Wittmann, M., Gravier, M. J., Niranjana, S., & Muir, W. A. (2023). Why, did I lose? Debriefing quality and its effects on justice, protests, and sales loss attributions. *Journal of Purchasing and Supply Management*, 29(1), 100819. <https://doi.org/10.1016/j.pursup.2023.100819>
- Heinrichs, J. H., & Lim, J.-S. (2003). Integrating web-based data mining tools with business models for knowledge management. *Decision Support Systems*, 35(1), 103-112. [https://doi.org/10.1016/S0167-9236\(02\)00098-2](https://doi.org/10.1016/S0167-9236(02)00098-2)
- Hesford, J., Hoffmann, K., Mangin, N., & Turner, M. J. (2020). Financial consequences of competitive set choice. *International Journal of Hospitality Management*, 86, 102453. <https://doi.org/10.1016/j.ijhm.2020.102453>
- Holstein, J., & Rantakari, A. (2023a). Space and the Dynamic Between Openness and Closure : Open strategizing in the TV series Borgen. *Organization Studies*, 44(1), 53-75. Scopus. <https://doi.org/10.1177/01708406221106311>
- Holstein, J., & Rantakari, A. (2023b). Space and the Dynamic Between Openness and Closure : Open strategizing in the TV series Borgen. *Organization Studies*, 44(1), 53-75. Scopus. <https://doi.org/10.1177/01708406221106311>
- Hu, Y., null, null, Xu, A., null, null, Hong, Y., null, null, Gal, D., null, null, Sinha, V., null, null, Akkiraju, R., & null, null. (2019). Generating Business Intelligence Through Social Media Analytics : Measuring Brand Personality with Consumer-, Employee-, and Firm-Generated Content. *Journal of Management Information Systems*, 36(3), 893-930. <https://doi.org/10.1080/07421222.2019.1628908>
- Ifan, H.-K., Dou, J.-M., Manullang, S., & Dou, H. (2004). Developing competitive technical intelligence in Indonesia. *Technovation*, 24(12), 995-999. [https://doi.org/10.1016/S0166-4972\(03\)00069-5](https://doi.org/10.1016/S0166-4972(03)00069-5)
- Itani, O. S., Krush, M. T., Agnihotri, R., & Trainor, K. J. (2020). Social media and customer relationship management technologies : Influencing buyer-seller information exchanges. *Industrial Marketing Management*, 90, 264-275. <https://doi.org/10.1016/j.indmarman.2020.07.015>
- Kalra, A., Agnihotri, R., & Briggs, E. (2021). The Role of Frontline Employees' Competitive Intelligence and Intraorganizational Social Capital in Driving Customer Outcomes. *Journal of Service Research*, 24(2), 269-283. Scopus. <https://doi.org/10.1177/1094670520958070>

- Kay, L., Youtie, J., & Shapira, P. (2014). Signs of things to come? What patent submissions by small and medium-sized enterprises say about corporate strategies in emerging technologies. *Technological Forecasting and Social Change*, 85, 17-25. <https://doi.org/10.1016/j.techfore.2013.09.006>
- Köseoglu, M. A., Ross, G., & Okumus, F. (2016). Competitive intelligence practices in hotels. *International Journal of Hospitality Management*, 53, 161-172. <https://doi.org/10.1016/j.ijhm.2015.11.002>
- Köseoglu, M. A., Yick, M. Y. Y., & Okumus, F. (2021a). Coopetition strategies for competitive intelligence practices-evidence from full-service hotels. *International Journal of Hospitality Management*, 99, 103049. <https://doi.org/10.1016/j.ijhm.2021.103049>
- Köseoglu, M. A., Yick, M. Y. Y., & Okumus, F. (2021b). Coopetition strategies for competitive intelligence practices-evidence from full-service hotels. *International Journal of Hospitality Management*, 99. Scopus. <https://doi.org/10.1016/j.ijhm.2021.103049>
- Köseoglu, M. A., Yick, M. Y. Y., & Okumus, F. (2021c). Coopetition strategies for competitive intelligence practices-evidence from full-service hotels. *International Journal of Hospitality Management*, 99, 103049. <https://doi.org/10.1016/j.ijhm.2021.103049>
- Larivet, S., & Brouard, F. (2007). *Stratégies des PME et pratiques d'intelligence économique et de veille stratégique*. 13.
- Lin, F., Evans, R. D., Kharel, R., & Williams, R. A. (2022). Competitor Intelligence and Product Innovation : The Role of Open-Mindedness and Interfunctional Coordination. *IEEE Transactions on Engineering Management*, 69(2), 314-328. <https://doi.org/10.1109/TEM.2019.2943359>
- Liu, Y., Qian, Y., Jiang, Y., & Shang, J. (2020). Using favorite data to analyze asymmetric competition : Machine learning models. *European Journal of Operational Research*, 287(2), 600-615. <https://doi.org/10.1016/j.ejor.2020.03.074>
- López-Robles, J. R., Otegi-Olaso, J. R., Porto-Gomez, I., Gamboa-Rosales, H., & Gamboa-Rosales, N. K. (2020). Understanding the intellectual structure and evolution of Competitive Intelligence : A bibliometric analysis from 1984 to 2017. *Technology Analysis & Strategic Management*, 32(5), 604-619. <https://doi.org/10.1080/09537325.2019.1686136>
- Lundgren-Henriksson, E.-L., & Sorsa, V. (2023). Open strategizing on social media : A process model of emotional mechanisms and outcomes from un-orchestrated participation. *Long Range Planning*, 56(3). Scopus. <https://doi.org/10.1016/j.lrp.2023.102320>
- Madureira, L., Popovič, A., & Castelli, M. (2021a). Competitive intelligence : A unified view and modular definition. *Technological Forecasting and Social Change*, 173, 121086. <https://doi.org/10.1016/j.techfore.2021.121086>
- Madureira, L., Popovič, A., & Castelli, M. (2021b). Competitive intelligence : A unified view and modular definition. *Technological Forecasting and Social Change*, 173, 121086. <https://doi.org/10.1016/j.techfore.2021.121086>
- Makadok, R., & Barney, J. B. (2001). Strategic Factor Market Intelligence : An Application of Information Economics to Strategy Formulation and Competitor Intelligence. *Management Science*, 47(12), 1621-1638. <https://doi.org/10.1287/mnsc.47.12.1621.10245>

- Mariadoss, B. J., Milewicz, C., Lee, S., & Sahaym, A. (2014). Salesperson competitive intelligence and performance: The role of product knowledge and sales force automation usage. *Industrial Marketing Management*, 43(1), 136-145. <https://doi.org/10.1016/j.indmarman.2013.08.005>
- McCarthy, J. E., & Keller, J. (2022). How Managerial Openness to Voice Shapes Internal Attraction: Evidence from United States School Systems. *ILR Review*, 75(4), 1001-1023. <https://doi.org/10.1177/00197939211008877>
- McCrohan, K. F. (1998). Competitive intelligence: Preparing for the information war. *Long Range Planning*, 31(4), 586-593. [https://doi.org/10.1016/S0024-6301\(98\)80051-4](https://doi.org/10.1016/S0024-6301(98)80051-4)
- Monino, J.-L. (2013). L'information au coeur de l'intelligence économique stratégique. *Marché et organisations*, 18(2).
- Montgomery, D. B., Moore, M. C., & Urbany, J. E. (2005). Reasoning About Competitive Reactions: Evidence from Executives. *Marketing Science*. <https://doi.org/10.1287/mksc.1040.0076>
- Ndjock, F. N. (2017). Diversité de sources d'information et processus décisionnel en période de crise. *Communication, technologies et développement*, 4, Article 4. <https://doi.org/10.4000/ctd.859>
- Nobre, T., & Grandclaude, D. (2021). Identifier et résoudre les dilemmes de la stratégie ouverte. Les apports d'une recherche intervention. *Revue française de gestion*, 294(1), 15-39. <https://doi.org/10.3166/rfg.2021.00508>
- Oh, W., & Lucas, H. C. (2006). Information Technology and Pricing Decisions: Price Adjustments in Online Computer Markets. *MIS Quarterly*, 30(3), 755-775. <https://doi.org/10.2307/25148748>
- Patton, K. M. (2005). The role of scanning in open intelligence systems. *Technological Forecasting and Social Change*, 72(9), 1082-1093. <https://doi.org/10.1016/j.techfore.2004.10.001>
- Qian, Y., Jiang, Y., Shang, J., Chai, Y., & Liu, Y. (2023). Why some products compete and others don't: A competitive attribution model from customer perspective. *Decision Support Systems*, 169, 113956. <https://doi.org/10.1016/j.dss.2023.113956>
- Qiu, T. (2008). Scanning for competitive intelligence: A managerial perspective. *European Journal of Marketing*, 42(7/8), 814-835. <https://doi.org/10.1108/03090560810877178>
- Ramírez, R., Österman, R., & Grönquist, D. (2013). Scenarios and early warnings as dynamic capabilities to frame managerial attention. *Technological Forecasting and Social Change*, 80(4), 825-838. <https://doi.org/10.1016/j.techfore.2012.10.029>
- Rapp, A., Agnihotri, R., Baker, T. L., & Andzulis, J. 'Mick'. (2015). Competitive intelligence collection and use by sales and service representatives: How managers' recognition and autonomy moderate individual performance. *Journal of the Academy of Marketing Science*, 43(3), 357-374. <https://doi.org/10.1007/s11747-014-0384-7>
- Rival, M., Bournois, F., & Chanut, V. (2013). *Intelligence économique, lobbying et valeurs publiques (Competitive intelligence, lobbying and public values)*. Eyrolles. <https://www.eyrolles.com/Entreprise/Livre/intelligence-economique-lobbying-et-valeurs-publiques-9782747220644/>

- Saïd, A. (2006). Rôle de l'intelligence économique dans la stratégie de l'entreprise. *Vie sciences de l'entreprise*, N° 173(4), 59-67.
- Salles, M. (2006). Decision making in SMEs and information requirements for competitive intelligence. *Production Planning & Control*, 17(3), 229-237. <https://doi.org/10.1080/09537280500285367>
- Saltos-Cruz, G., León-Saltos, A., Saltos-Cruz, C., & Reyes-Terán, A. (2023). Intellectual capital in the performance of Ecuadorian banana companies. *Revista Venezolana de Gerencia*, 28(9), 266-280. Scopus. <https://doi.org/10.52080/rvgluz.28.e9.17>
- Schaer, O., Kourentzes, N., & Fildes, R. (2022). Predictive competitive intelligence with prerelease online search traffic. *Production and Operations Management*, 31(10), 3823-3839. <https://doi.org/10.1111/poms.13790>
- Schultze, U., & Boland, R. J. (2000). Knowledge management technology and the reproduction of knowledge work practices. *The Journal of Strategic Information Systems*, 9(2), 193-212. [https://doi.org/10.1016/S0963-8687\(00\)00043-3](https://doi.org/10.1016/S0963-8687(00)00043-3)
- Splitter, V., Dobusch, L., von Krogh, G., Whittington, R., & Walgenbach, P. (2023). Openness as Organizing Principle : Introduction to the Special Issue. *Organization Studies*, 44(1), 7-27. Scopus. <https://doi.org/10.1177/01708406221145595>
- Splitter, V., Jarzabkowski, P., & Seidl, D. (2023). Middle Managers' Struggle Over Their Subject Position in Open Strategy Processes. *Journal of Management Studies*, 60(7), 1884-1923. Scopus. <https://doi.org/10.1111/joms.12776>
- Stephan, J., Murmann, J. P., Boeker, W., & Goodstein, J. (2003). Bringing Managers into Theories of Multimarket Competition : CEOs and the Determinants of Market Entry. *Organization Science*, 14(4), 403-421. <https://doi.org/10.1287/orsc.14.4.403.17484>
- Tanev, S., & Bailetti, T. (2008). Competitive intelligence information and innovation in small Canadian firms. *European Journal of Marketing*, 42(7/8), 786-803. <https://doi.org/10.1108/03090560810877150>
- Urbany, J., & Montgomery, D. (1998). Rational Strategic Reasoning : An Unnatural Act? *Marketing Letters*, 9(3), 285-299. <https://doi.org/10.1023/A:1008024306716>
- Vieira, V. A., Jaramillo, J. F., Agnihotri, R., & Molina, A. C. S. (2023a). Salespeople's competitive intelligence, efficiency, and performance : The role of intelligence diversity and manager's tenure. *Journal of Business Research*, 159, 113705. <https://doi.org/10.1016/j.jbusres.2023.113705>
- Vieira, V. A., Jaramillo, J. F., Agnihotri, R., & Molina, A. C. S. (2023b). Salespeople's competitive intelligence, efficiency, and performance : The role of intelligence diversity and manager's tenure. *Journal of Business Research*, 159, 113705. <https://doi.org/10.1016/j.jbusres.2023.113705>
- Watanabe, C., Takayama, M., Nagamatsu, A., Tagami, T., & Griffy-Brown, C. (2002). Technology spillover as a complement for high-level R&D intensity in the pharmaceutical industry. *Technovation*, 22(4), 245-258. [https://doi.org/10.1016/S0166-4972\(01\)00004-9](https://doi.org/10.1016/S0166-4972(01)00004-9)
- Watts, R. J., & Porter, A. L. (1997). Innovation forecasting. *Technological Forecasting and Social Change*, 56(1), 25-47. [https://doi.org/10.1016/S0040-1625\(97\)00050-4](https://doi.org/10.1016/S0040-1625(97)00050-4)

- Whittington, R., Cailluet, L., & Yakis-Douglas, B. (2011). Opening Strategy : Evolution of a Precarious Profession. *British Journal of Management*, 22(3), 531-544. <https://doi.org/10.1111/j.1467-8551.2011.00762.x>
- Wonglimpiyarat, J. (2005). Standard competition : Is collaborative strategy necessary in shaping the smart card market? *Technological Forecasting and Social Change*, 72(8), 1001-1010. <https://doi.org/10.1016/j.techfore.2004.07.004>
- Xu, X. M., Kaye, G. R., & Duan, Y. (2003). UK executives' vision on business environment for information scanning : A cross industry study. *Information & Management*, 40(5), 381-389. [https://doi.org/10.1016/S0378-7206\(02\)00045-9](https://doi.org/10.1016/S0378-7206(02)00045-9)
- Xu, X., Qian, H., Ge, C., & Lin, Z. (2020). Industry classification with online resume big data : A design science approach. *Information & Management*, 57(5), 103182. <https://doi.org/10.1016/j.im.2019.103182>
- Zheng, Z. (Eric), Fader, P., & Padmanabhan, B. (2011). From Business Intelligence to Competitive Intelligence : Inferring Competitive Measures Using Augmented Site-Centric Data. *Information Systems Research*. <https://doi.org/10.1287/isre.1110.0385>