A REVIEW OF EXISTING LITERATURE ON COMPETITIVE INTELLIGENCE AND INSURANCE MARKETS

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Abstract

Competitive intelligence (CI) involves monitoring competitors and providing organisations with actionable and meaningful intelligence (Ranjan & Foropon, 2021). This paper aims to examine current trends in the CI and insurance literature. A qualitative approach with an exploratory-driven design was used to examine CI-related articles. A systematic literature review found 24 publications from 2008 to 2022. Thematic content analysis was used to analyse the qualitative data. Journal articles were obtained from Academic Search Complete, EBSCOhost, and Google Scholar. Publications were classified according to journal, publication year, article count, citations and methodology. The findings showed that Iranian authors produced more CI-related academic articles focusing on insurance. Only a few CI studies in insurance have been published in other countries. The global insurance industry's CI research was underdeveloped, with articles scattered across various journals. Two South African authors contributed multiple articles. Research in this area needs to be tested more thoroughly before maturity can be achieved. Furthermore, most of the studies the authors reviewed were quantitative. Mixing research methods could contribute more substantive theoretical contributions. In addition, more studies need to investigate the use of data analytics tools and conceptual frameworks for theory testing.

Keywords: Competitive Intelligence, Big Data, Data Analytics, Insurance, South Africa

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1. INTRODUCTION

It has been proven that the level of development of the insurance industry is one of the best indicators of a country's economic growth (Zarei & Hamdani, 2022). However, the global insurance market has been severely disrupted by the volatile business environment due to changes in customer expectations, technological advancements, and legislative revisions likely bringing significant change, allowing insurers to add more value and deliver a customer-centric experience (Muritala et al., 2019).

As electronic data grows exponentially in the digital economy, insurance companies are rethinking their traditional management processes

and creating new revenue streams for growth (Catlin et al., 2018). Insurance companies should adopt more effective strategies, such as competitive intelligence (CI), to anticipate future risks, discover new development opportunities, and overcome future obstacles (Kettani, 2021). Therefore, CI, which focuses on information processing and knowledge generation, is widely regarded as one of the finest practices insurance companies must implement to perform data analytics, optimise strategic analysis and intelligent decision support (Zarei & Hamdani, 2022). However, relatively few studies on CI pertaining to the insurance sector exist.

Scholars from various industries have been studying CI and its value for decades (Bao, 2020; Dishman & Calof, 2008; Wright et al., 2009). Nonetheless, there is little research on the application of CI in the global insurance industry. A few studies have been done before, and this paper critically reviews the existing CI-related literature in the global insurance industry. With the combined growth of academic interest and fragmentation of the CI literature in the insurance sector, we believe consolidation and integration of CI literature are timely.

This study seeks to further the debate and ask future researchers the following meaningful question by evaluating the CI literature in the insurance sector:

RQ: What are the key features and trends of the competitive intelligence literature in the insurance industry?

This article is divided into several sections to begin answering this question. Section 2 is a review of CI and insurance mainstream literature. In Section 3, the Authors employ an empirical literature review to explain significant methodological decisions made by contributing authors. The relevant results are reported in Section 4. Then, in Section 5, the Authors discuss the findings and use analytical results to explore future study prospects, finally leading to conclusions in Section 6.

2. LITERATURE REVIEW

Review articles primarily contribute to synthesising existing knowledge about a particular topic or domain for reaching broad conclusions (Siddaway et al., 2019). Review studies guide future studies by providing a framework for future research (Cropanzano, 2009). It is essential to examine how literature has developed over time, given the critical role that CI plays in the insurance industry. Literature and empirical literature reviews are presented in this section.

2.1. Competitive intelligence (CI)

Today's business environment is highly competitive and uncertain, resulting in organisations facing difficulties in their competitive environment, requiring organisations to adapt to their surroundings to survive and prosper (Kettani, 2021). Therefore, it is essential for organisations operating in a turbulent and complex environment with intense competition and a high level of uncertainty to implement CI into their activities to improve their competitive position and market share (Kettani, 2021).

Thus, organisations without CI will likely face more challenges in a competitive environment (Oraee et al., 2020). In concurrence, Chawinga and Chipeta (2017) demonstrated that knowledge management and CI collectively affected the success of enterprises and their competitive position. For that reason, modern organisations generate revenue by collecting big data from inbound and outbound sources to survive and prosper in the competitive environment (ur Rehman et al., 2016).

As competitors increase and customer demands change, organisations increasingly use big data and developing technologies to evaluate and gain valuable insights related to decision-making processes (Ranjan & Foropon, 2021). Thus, big data tools and methodologies can transform how CI is directed and ultimately integrated (Ranjan & Foropon, 2021).

CI is the scientific term used to describe the requirement for data gathering and its transformation into useful knowledge (Saddhono et al., 2019). The most common results of CI are identifying previously undiscovered clients, improved strategic planning, a clearer picture of the organisation's hidden knowledge, the support of a systematic information collection procedure, and the correction of errors (Oraee et al., 2020).

In commerce, CI is intelligence that is well suited to business. CI systematically gathers and scans environmental information to make accurate and timely decisions (Capinzaiki Ottonicar et al., 2018). Concurring, CI assists with making successful decisions by identifying relevant information quickly (Kettani, 2021). Therefore, CI is the process of gathering, evaluating, and acting on information about the competitive environment to help an organisation achieve long-term competitive advantage (Crayon, 2022).

Consistently, CI involves the gathering, analysing, and storing of data that all members of an organisation will use to maintain its competitive position (Shimakalantarian et al., 2012). In essence, CI is a dynamic process that gathers, processes, distributes, analyses, and manages meaningful information within an unpredictable context to guide decisions (Kettani, 2021).

From an organisational standpoint, CI may be described as collecting, analysing, interpreting, and disseminating strategic information appropriately for managerial decision-making (Acharya et al., 2018). Thus, CI systematically improves organisational effectiveness by enhancing the quality and flow of information throughout the organisation, allowing potential risks and opportunities to be identified early (Štefániková & Masárová, 2014).

Furthermore, CI is an early warning of future occurrences that may influence the company's performance (Mortet & Nadi, 2013). Therefore, CI is regarded as a strategic management tool and one of the fastest-growing business fields. CI is considered a practical approach to gaining a competitive advantage (Mohamadian et al., 2014).

2.2. Insurance

As a result of the spread of COVID-19, humanity's economic and social development has suffered, and the recession has also affected the development of society as a whole in a negative way. While

the pandemic was out of control on a global scale, rapidly developing insurance companies in an innovative economy were confronted with problems that traditional classical knowledge and paradigms could not solve (Tajimuratovna et al., 2022).

The COVID-19 pandemic has amplified and created an unprecedented opportunity for change, resulting in insurance companies adapting and innovating more quickly than ever before (Tulungen et al., 2021). According to Wang et al. (2020), insurance serves primarily as a risk management tool. Therefore, an insurance market that functions well encourages productive risk-taking and reduces the effects of risk exposure (Chamberlain et al., 2017; Msulwa et al., 2018).

Insurance is a risk management tool primarily used to hedge risk resulting from unpredicted events (Jadoun, 2017). Insurance protects people and assets and is vital for sustainable development (Weedige et al., 2019). In that way, insurance covers various risks in all human activities, including social and economic activity (Din et al., 2017). Furthermore, insurance is the primary source of risk management resources for businesses and people, and it also plays an essential role in economic growth (Devarakonda & Chittineni, 2019). Basically, insurance is a pool of reserves generated by multiple policyholders that compensate the insured in case of a loss (Ukpong & Acha, 2017).

Thus, insurance mitigates financial risks arising from the insured's death (Fadun & Shoyemi, 2018). Individuals can reduce their risk exposure most directly with insurance contracts through insurance (Loreau et al., 2021). So, they can alleviate their financial burden by transferring losses from adverse events to insurance companies (Weedige et al., 2019). In addition to protecting the insured and their beneficiaries against income, life, and property losses, insurance also accumulates income that may be used to maintain living standards in retirement (Apergis & Poufinas, 2020).

Due to the current technological wave allowing insurance companies to access and use actionable information in real-time, big data and financial science are precious in integrating with next-generation technologies (Liu et al., 2018). Yet, insurance companies have difficulty analysing data, seeing past customer lifecycles, and anticipating competition that threatens their performance. Instead of offering their customers the desired solutions, insurance companies stick to traditional products that are not attractive to customers (Oyomo, 2019).

The insurance industry is highly competitive, and insurance companies must gain a more holistic view of their enterprise's performance through better insights. Their business models evaluate information using data and make appropriate decisions based on that information (Elhadad, 2021).

While insurance companies have amassed massive amounts of granular data about every aspect of their operations, many struggles to collate information from disparate sources and turn it into insights that enable the end user to overcome problems actively, respond quickly to market trends, and improve business efficiency (Elhadad, 2021). So, the insurance industry needs to invest in CI to acquire accurate and relevant information for guiding decisions and sustaining competitive advantage (Odiachi et al., 2021). Insurance companies can exploit customer data in various ways and integrate CI with automated artificial intelligence to transform data into usable insights (Riikkinen et al., 2018).

Furthermore, insurance companies can benefit from applying CI to unlock large volumes of raw data into actionable insights, comprehend customers' needs, and anticipate drifts in the markets. Insurance companies can also use CI to gather and analyse competitor information (Kamboj et al., 2018).

2.3. Empirical literature review

The origins of modern CI as a business function can be traced back to the 1950s. Its significant growth and success occurred during the 1980s, coinciding with the formation of the Strategic and Competitive Intelligence Professionals (SCIP) Association (Chen, 2016).

Over the last three decades, this organisation has effectively facilitated the widespread adoption and application of CI practices in leading companies and industries in the world's developed economies (Chen, 2016). The theory of CI has been studied and learned by Chinese scholars and experts since the 1990s. The formal publications and literature on CI began in 1997 and continued to grow from 2008 to 2015. There are more than 2200 published articles on CI in China, and the authors are located in major research institutions (Chen, 2016).

Many scholars have investigated CI in a variety of industries, including automobiles, commercial banks, insurance, pharmaceuticals, sports, and tourism (Kettani, 2021; Tulungen et al., 2021; Wright et al., 2008; Xiang & Qiu, 2012; Xu et al., 2019; Zhou, 2015).

A study by Odiachi et al. (2021) investigated the influence of CI on the Nigerian insurance industry's organisational sustainability. This study found that individual, competitor, product, and CI had a significant relationship with organisational sustainability. However, technological and market intelligence had no significant association with organisational sustainability.

Also, this study's findings showed that when technological, strategic, product, market, and competitor information are integrated, they have a favourable link with organisational sustainability. Furthermore, the authors highlighted that although the study emphasised the importance of CI and organisational sustainability in the Nigerian insurance industry, it focused on only a few areas. As a result, they recommended that the insurance industry should recognise and enhance the application and implementation of CI in all parts of the organisation's operations.

Oyomo (2019) evaluated the effects of customer centricity on the CI of Kenyan insurance organisations. This study discovered statistically significant positive and negative connections between customer centricity and CI aspects. Customer life cycle and customer value were both critical. Also, the customer experience was found to have a considerable negative link with CI.

Furthermore, the author concluded that customer value centricity dimensions, such as technical innovation and customer experience centricity integration with new technology, impacted insurance businesses' CI. In addition, this study's regression analysis revealed that implementing

customer value-centricity practises in insurance organisations mostly contributed to CI in Kenyan insurance firms, followed by customer experience centricity and customer life cycle.

Amiri et al. (2017) evaluated the impact of CI on the development of sustainable competitive advantage (SCA) for Iran Insurance Company. They discovered that CI helped them gain a competitive advantage in the insurance business. The findings of this study demonstrated the influence of CI on generating a competitive edge. In contrast, the findings suggested that planning, focus, and information-sharing in Iran Insurance Company had little effect on competitive advantage, despite literature from other studies implying that CI plays a significant strategic role in information planning and dissemination.

Muritala and Ajetunmobi (2019) explored CI and the sustainable competitive advantage of selected insurance businesses in Nigeria in another research study. Their findings revealed that CI was connected to the competitive advantage of selected insurance businesses in Nigeria. Moreover, their study advised that insurance company managers and directors equip their organisations with modern marketing and information technologies to enable them to capitalise on market possibilities that will offer them a competitive advantage.

In addition, Muritala et al. (2019) examined CI and employee productivity of selected Nigerian insurance organisations. The results of this study showed that CI had a positive relationship with employee productivity. Furthermore, the authors recommended that managers of insurance companies should put in place good programs to provide employees with the right attitudes, knowledge, communication skills, and authority to handle non-routine transactions.

Hamidizadeh et al. (2014) developed a dynamic CI model to achieve a sustainable competitive advantage in Insurance Industry between 2008–2013. The study described and proved the effective CI aspects in the insurance industry. The findings revealed that managers were aware of CI elements such as staff training, communicative abilities, and corporate loyalty. Also, another descriptive study surveyed 114 agents of Iran Insurance Company in Kermanshah province.

These studies' results showed a significant relationship between CI and the sale of insurance products among the agents. Agents also asserted that knowledge of competitors was integral to CI (Nematizadeh et al., 2013, as cited in Amiri et al., 2017; Muritala & Ajetunmobi, 2019).

Sepahvand et al. (2016) probed the effect of CI on the organisational performance of insurance companies in Sanandaj, Iran. Their research showed a significant positive effect of CI on organisational performance. Furthermore, Sepahvand et al. (2016) suggested that information gathered from customers should be analysed to identify customer needs and improve organisational performance. In addition, Sepahvand et al. (2016) also advocated that the insurance company evaluate its competitive structure by investing in a CI system to assist in replacing and diversifying its products and services.

Tahmasebifard (2018) examined the effect of CI and its subtypes on market performance in Iranian insurance companies. The findings of this study demonstrated that CI has a beneficial impact on market performance. Among CI subtypes, competitor intelligence, market intelligence, and technology intelligence have the most influence.

Atkinson et al. (2022) examined the impact of CI on organisational agility through strategic flexibility and organisational innovation with 83 agency managers of insurance companies in Iran. This study discovered that CI indirectly impacted organisational agility through strategic flexibility, which served as a moderating variable. Though CI influenced organisational innovation, it had no substantial impact on organisational agility.

Mohamadian et al. (2014) surveyed Asian insurance expects to explore the dynamic model of CI for achieving sustainable competitive advantage in the insurance industry from 2008 to 2013. The findings of this investigation confirmed the measuring tool's dependability. The primary factors found were a competitive advantage, dynamic, cause and effect model, flow and state model, and insurance business.

Bitencourt Jorge et al. (2019) analysed the use of access to information law in the process of CI in the Brazilian health insurance sector, focusing on SulAmerica Insurance Company (SulAmérica Seguros). This study demonstrated that adopting the information access law enabled the corporation to employ information derived from scanning and monitoring in the CI process, yielding significant commercial differentials.

Auxiliadora do Nascimento Mélo and Dumke de Medeiros (2007) developed a responsive and up-to-date CI system which enables constant upgrading and improvement of business management practices in Brazil. The study identified the main components of intelligence necessary for achieving competitive advantage. The findings of this study indicated that the proposed CI system model might help health insurance firms in Brazil survive by delivering intelligent information and appropriate decision-making in real time.

Pellissier and Kruger (2011a) investigated the existing knowledge and use of SI systems and procedures in the South African long-term insurance industry. This study's findings suggested that CI operations were more frequent in bigger organisations in the long-term insurance business. In contrast, smaller organisations employ CI on an ad hoc or as-needed basis.

In addition, Pellissier and Kruger (2011b) explored the application of SI as a strategic management technique in the South African long-term insurance sector. The findings of this study revealed that relatively few organisations used CI to develop and send information to management on time. Furthermore, this study found that CI was more established in bigger companies, mainly for strategic decisions and gaining insights about customer analytics and markets. Barnea (2016) consistently showed that larger organisations predominantly employed CI and the majority of the enterprises who replied (60%) competed in worldwide marketplaces.

Vahdati et al. (2017) studied the effect of SI on the Iranian insurance industry's human capital, structural capital and relational capital. This study found that SI impacted human, structural, and relational capital in the insurance business in

Khorramabad. Furthermore, this study found that SI, human, structural, and relational capital were essential characteristics in the Khorramabad insurance market.

Oubrich et al. (2018) investigated the level of CI maturity in Moroccan enterprises, including insurance companies, and built a CI maturity model based on the findings. This study showed that the majority of Moroccan enterprises, including insurance companies, were at an early stage of CI. Also, CI techniques were used for environment monitoring, and competition in the business environment was not fiercely contested. The authors also highlighted the lack of CI structure at this level. The majority of these Moroccan businesses were unable to adapt to changes in the business climate. The CI systems and procedures were released infrequently.

Muñoz-Cañavate and Alves-Albero (2017) investigated CI practises in a sample of Spanish organisations, including insurance companies. The authors observed that, while CI techniques were well-established in the organisations analysed, they were typically carried out by departments other than the intelligence unit. Furthermore, this study revealed that the intelligence unit primarily delivered CI to management and interested consumers of their product, leaving most staff with no understanding of how CI was vital because they were excluded from the process.

Calof et al. (2018) consistently demonstrated that 87% of the responding organisations, including insurance companies, had some formal CI structure with intelligence-related roles. Moreover, they revealed that responding organisations employed CI for a wide range of strategic and tactical business choices, with intelligence focusing mostly on rivals and consumers and innovation being one of the most common intelligence focuses.

Erickson and Rothberg (2012) explored how various industries, including insurance companies in the USA, use CI to balance knowledge development with knowledge protection. The findings of this investigation revealed that CI activity in the instance of Standard Industrial Classification (SIC) Code 6311 — Life Insurance was aggressive and noticeable. Furthermore, the authors discovered that CI activity for SIC Code 6311 was constant across all organisations evaluated, with seven distinct firms stating that CI activities were nearly at an advanced level.

In addition, Johns and Van Doren (2010) researched CI in service marketing from various organisations, including significant insurance firms that manage case inventories. This case study's findings revealed that organisations engaged in CI practices acquired a competitive edge. Furthermore, the authors opined that insurance companies had reshaped their outlooks to include CI in market research, which used to be less prevalent in their operations.

du Toit and Sewdass (2014) surveyed CI experts in various organisations, including insurance companies, to determine the current state of CI in Morocco. This study's findings showed that most businesses, including insurance, employ CI as a strategic tool for environmental scanning.

Equally, Sewdass and du Toit (2014) examined the present condition of CI in South African companies. The majority of respondents in this research (25%) worked in finance, insurance, real estate, and business services, while the remaining 75% worked in other industries. The results of this study indicated that insurance companies were amongst some sectors that have invested in CI units since they operate in an environment where competition is very intense.

Moreover, 60% of the respondents strongly agreed that most organisations used CI to remain cognisant of government legislative trends. Concurring, du Toit (2015) and Pellissier and Kruger (2011a), South African companies only employ CI for new and pending legislative trends rather than keeping abreast with domestic and international market trends liable to impact them.

Sewdass and du Toit (2015) also conducted comparison research between Brazil and South Africa, including insurance firms among respondents. This study's findings showed that only a limited number of organisations in Brazil and South Africa value the importance of a CI unit.

Furthermore, the study found that CI functions were more advanced in South Africa than in Brazil. In addition, the authors pointed out that it was essential for organisations operating in both nations to embed CI culture to observe global events and trends. Congruently, Kuhn et al. (2020) discovered that CI was still practised in South Africa, with evidence of the field expanding inside the nation based on many lines of study.

3. METHODOLOGY

This research arena is still in its nascent and exploratory phase and it utilised a variety of peer-reviewed academic journal articles through applied qualitative and library research methods.

This study was based on a qualitative approach and a systematic literature review (SLR). The authors conducted an SLR to answer the study's research question. SLR recommend that reviewers apply consistently and clearly stated prior inclusion criteria for studies to be reviewed.

Given the scope of published work on the issue, the authors achieved this aim by following methodical planning, execution, and publishing the synthesis findings as detailed by (Tranfield et al., 2003). The approach is dependable to offer a complete picture of current knowledge on a specific topic because step-by-step protocols assure the process's validity (Denyer & Tranfield, 2009).

The authors determined that an SLR was the most appropriate research strategy for the above reasons. The authors focused their systematic study on various databases from 2007 to 2022. For retrieval, the authors selected keywords that were diverse, relevant, and necessary. The authors conducted a series of online database searches using the keywords "competitive intelligence and insurance". Multiple trustworthy scientific information databases were selected to provide more comprehensive coverage of studies. Due to the restricted access to the databases, the authors searched Academic Search Complete, EBSCOhost, and Google Scholar for relevant texts.

This step involved creating a database of CI articles associated with insurance. Developing such a database was required to identify prominent

competitive intelligence topics. Database exclusion and inclusion criteria were developed based on topic coverage, year of publication, search words, and article type. The researchers selected scholarly articles on competitive intelligence and insurance from multiple reliable sources.

They retrieved peer-reviewed journal articles that included "competitive intelligence and insurance" in their titles, abstracts, content, keywords, and publication year. In addition, the authors only counted articles found in multiple databases once. Their criteria excluded articles that were not directly related to CI and insurance, and they only considered articles published in academic journals.

In our initial search, 800 articles were found relating to CI. The authors reviewed the abstracts and scopes to determine which articles were suitable and selected those that focused on CI and insurance. After applying the selection criterion, the authors identified 24 out of 800 relevant publications published in academic journals between 2007 and 2022.

The authors used thematic content analysis to identify and interpret themes and patterns in qualitative data. In addition, it summarised the literature qualitatively and provided context and meaning behind the findings. Data content and data interpretation were then used to create thematic codes.

In addition, publications were categorised by journal names, titles, publication year and article count. Table 1 shows a breakdown of several articles by journals. Furthermore, the authors adapted related elements of Oraee et al.'s (2020) framework to create their article categorisation framework. This mixed method framework was broken down into nine characteristics, as shown in Table A.1 (see Appendix).

This method provided the authors with an effective means of assessing insurance studies within the context of competitive intelligence and insurance research. Each author independently assessed each article and codified the data into their database to ensure its quality and dependability. Finally, the authors adapted Latapí Agudelo et al.'s (2019) evolution framework to evaluate the historical academic contribution of competitive intelligence and insurance.

The section that follows provides a detailed description of the research findings from the articles on CI and insurance that were chosen.

4. RESULTS

In this section, the authors present the collected articles' characteristics to provide empirical evidence of the CI literature in the global insurance sector. Furthermore, this section combines articles to offer a comprehensive overview of CI and insurance. It also informs the findings of the thematic codes showing journal names, year of publication, article count, country of publication, citations, and research methods and types employed in various articles. Table 1 presents the number of published insurance and CI-related articles from 2007 to 2022. Table 1 shows that the thematic codes ($n = 1$) were similar for the number of CI journal articles published with an insurance emphasis and with all industries inclusive of insurance. Based on this result, there were no journals that published more publications on CI or insurance during the study period.

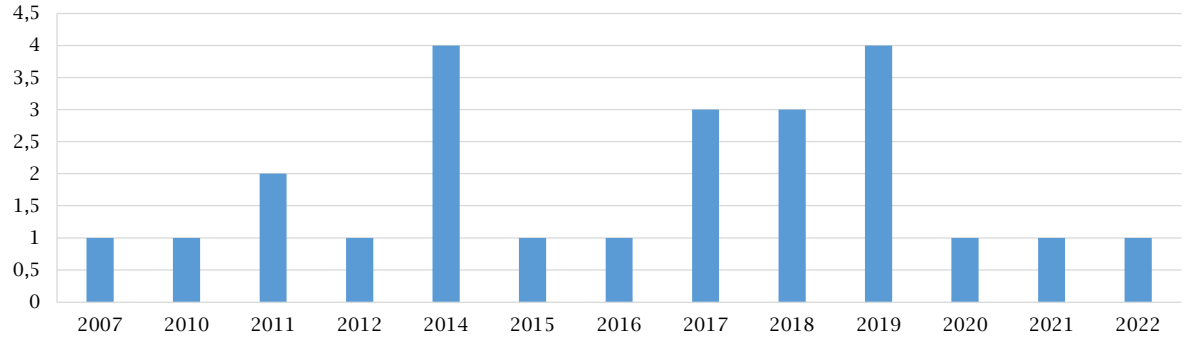
Table 1. CI and insurance-related journal articles

Author	*Year*	*Geographic focus*	*Industry focus*	*Article count*
Auxiliadora do Nascimento Mélo and Dumke de Medeiros (2007)	2007	Brazil	Insurance	1
Johns and Van Doren (2010)	2010	USA	All	1
Pellissier and Kruger (2011a)	2011	South Africa	Insurance	1
Pellissier and Kruger (2011b)	2011	South Africa	Insurance	1
Erickson and Rothberg (2012)	2012	USA	All	1
Hamidizadeh et al. (2014)	2014	Iran	Insurance	1
Mohamadian et al. (2014)	2014	Iran	Insurance	1
du Toit and Sewdass (2014)	2014	Morocco	All	1
Sewdass and du Toit (2014)	2014	South Africa	All	1
Sewdass and du Toit (2015)	2015	Brazil and South Africa	All	1
Sepahvand et al. (2016)	2016	Iran	Insurance	1
Amiri et al. (2017)	2017	Iran	Insurance	1
Vahdati et al. (2017)	2017	Iran	Insurance	1
Muñoz-Cañavate and Alves-Albero (2017)	2017	Spain	All	1
Calof et al. (2018)	2018	Europe	All	1
Tahmasebifard (2018)	2018	Iran	Insurance	1
Oubrich et al. (2018)	2018	Morocco	All	1
Bitencourt Jorge et al. (2019)	2019	Brazil	Insurance	1
Oyomo (2019)	2019	Kenya	Insurance	1
Muritala and Ajetunmobi (2019)	2019	Nigeria	Insurance	1
Muritala et al. (2019)	2019	Nigeria	Insurance	1
Kuhn et al. (2020)	2020	South Africa	All	1
Odiachi et al. (2021)	2021	Nigeria	Insurance	1
Atkinson et al. (2022)	2022	Iran	Insurance	1
Total				24

Source: Authors' elaboration.

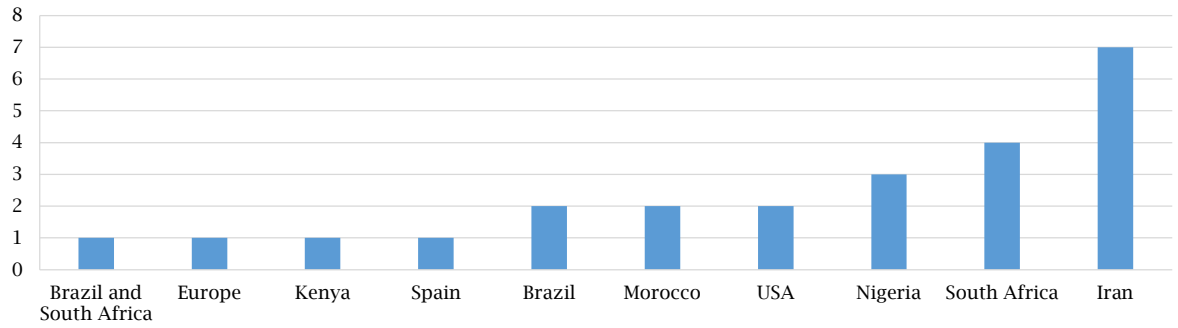
Second, the authors evaluated the number of CI and insurance-related articles published in various journals between 2007 and 2022. Figure 1 indicates the increasing number of CI and insurance-related publications, particularly from 2011 ($n = 2$), 2014 ($n = 4$), 2017 ($n = 3$), 2018 ($n = 3$), and 2019 ($n = 4$), with more papers published in 2014, 2019, 2017, 2018, and 2011. Notably, academic interest in CI and insurance remained modest and constant in 2007 ($n = 1$), 2010 ($n = 1$), 2012 ($n = 1$), 2015 ($n = 1$), 2016 ($n = 1$), 2020 ($n = 1$), 2021 ($n = 1$), and 2022 ($n = 1$).

Figure 1. The number of CI and insurance-related articles from 2007–2022



Third, the authors looked at the primary authors of selected articles and the geographic areas where research articles were completed. The number of papers published by geographic focus is presented in Figure 2.

Figure 2. Number of articles by geographic focus



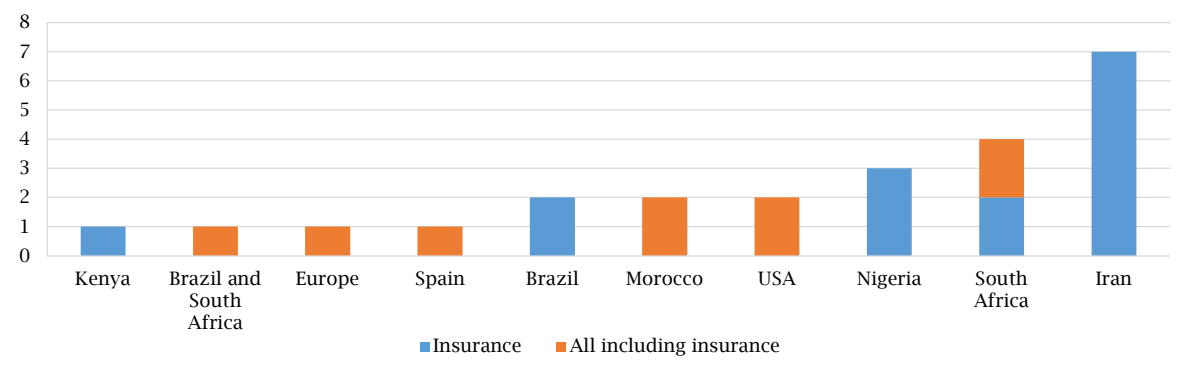
As shown in Figure 3, Iran had the most prolific authors in CI-related articles with a geographic focus on insurance ($n = 7$). Then again, South African ($n = 5$) and Nigeria ($n = 3$) authors followed with a geographic focus. Furthermore, many of the results for CI-related publications, specifically insurance and all businesses that include insurance, were geographically focused.

In addition, Figure 3 shows that the least amount of CI-related insurance publications was published by Brazilian ($n = 2$), Moroccan ($n = 2$), USA ($n = 2$), European (n = 1), Kenya ($n = 1$) and Spanish ($n = 1$) authors. Also, the authors examined publications with an insurance focus and those with other sectors that included insurance by geographic location (see Figure 3).

According to our findings, Iranians ($n = 7$) published the most CI-related articles with an insurance focus, followed by Nigerians ($n = 3$), Brazilians ($n = 2$), and South Africans ($n = 2$), with Kenyans ($n = 1$) creating the fewest. Furthermore, the authors discovered that writers from these geographic areas authored 62.5% of peer-reviewed scholarly papers with an insurance focus.

Similarly, among all industries analysed, including insurance, South African ($n = 3$) writers published the most publications ($n = 3$). They were then followed by authors from the United States ($n = 2$) and Morocco ($n = 2$), with Europe ($n = 1$) and Spain ($n = 1$) contributing the least articles in this category. Thus, 37.5% of peer-reviewed publications across all industries, including insurance, were published in this category.

Figure 3. Competitive intelligence-related articles by industry focus



Fourth, the researchers analysed the number of articles cited and the methodologies used by each author. Table A.1 (see Appendix) shows research articles categorised as exploratory, theory-building, or theory testing, as well as their citation counts. The authors found that theory building ($n = 9$), theory testing ($n = 9$), and exploratory studies ($n = 6$) accounted for the majority of our sample. The prevalence of theory development and testing suggests that theory development to validate new constructs and propositions has increased over time.

Remarkably, Iranians ($n = 7$) produced the most theory-testing studies, followed by Nigeria ($n = 1$) and Kenya ($n = 1$). The most common methods used in these studies were single case studies ($n = 9$). While authors from South Africa ($n = 4$), Nigeria ($n = 3$), Morocco ($n = 1$), Spain ($n = 1$), and Europe ($n = 1$) produced theory-building studies. Multiple case studies ($n = 5$) and single case studies ($n = 4$) were commonly used for theory-building studies.

Exploratory studies, on the other hand, constituted ($n = 6$), with only Brazilian ($n = 2$), North American ($n = 2$), South African ($n = 1$), and Moroccan ($n = 1$) authors producing exploratory studies.

The most common methods used in these studies were multiple case studies ($n = 4$) and single case studies ($n = 2$). In addition, the majority of theory-building and testing studies ($n = 15$) explicitly mentioned their data analysis tools, whereas the majority of exploratory studies ($n = 6$), including theory-building studies ($n = 3$), did not. This finding emphasises the limited use of well-defined theoretical frameworks, which stems primarily from the number of exploratory articles — implying that more research is required to test and validate existing theories in the insurance context.

Also important, there were 589 articles cited geographically across all industries, showing scholarly interest in the subject area. Figure 4 depicts the geographical distribution of article citations from 2007 to 2022.

Figure 4. Article citations by geographic and industry focus

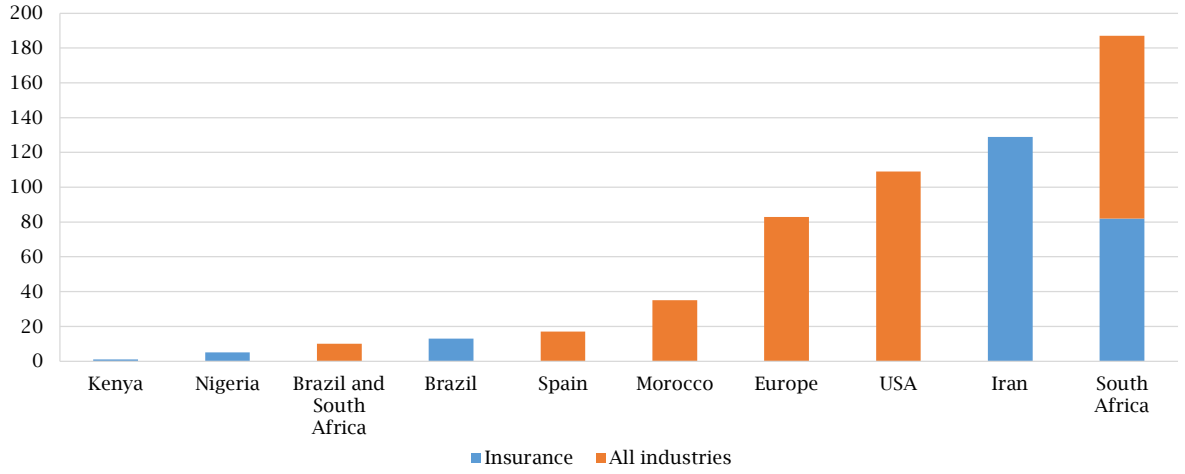


Figure 4 above shows that Iran ($n = 129$) had the most cited articles regarding CI and insurance, followed by South Africa ($n = 82$), Brazil ($n = 13$), Nigeria ($n = 5$), and Kenya ($n = 1$). Academics and scholars in higher education seem to be the most prolific writers since they frequently cite these articles in their work. This justifies the need for more research in this field to establish causative relationships between CI and insurance.

Meanwhile, the USA ($n = 109$) had the most cited articles across all industry sectors, followed by South Africa ($n = 105$), Europe ($n = 83$), Morocco ($n = 35$), Spain ($n = 17$), and Brazil and South Africa ($n = 10$). These results signify that a number of journals have published articles on CI and insurance, but the literature appears to be very scattered.

Finally, the authors examined the evolving body of knowledge on CI and its application in the insurance industry. This analysis included a thorough examination of academic contributions over time. Figure A.1 (see Appendix) depicts the total amount of knowledge generated by authors from various countries between 2007 and 2022. The color-coded icons in the figure represent the level of influence associated with each contribution. The red icons represent a high level of influence, the green icons a medium level of influence, the yellow icons a moderate level of influence, and the blue icons a low level of influence.

Figure A.1 (see Appendix) shows that the years 2014 and 2019 experienced a greater level of influence in terms of academic contributions. As a result, 2017 and 2018 had a medium level of influence, while 2011 had a moderate level of influence. In contrast, the majority of the years studied had a comparatively lower level of influence.

5. DISCUSSION

Changing competitive environments require organisations to utilise CI for maintaining their current position in the competition, and survive. The adoption of CI has grown significantly in organisations, and they are more eager to deploy and implement this process (Oraee et al., 2020). Despite the fact that CI has received a lot of attention in innovation research, statistics show that nearly 480 of the world's top 500 enterprises have a fully functional CI system (Xu et al., 2019).

The majority of existing literature on CI in technological innovations is widely distributed

across all industries, with little empirical research in the context of insurance businesses. Hence, a study by du Toit (2015) investigated trends in CI literature to determine its development as a subject field. In this qualitative, with an exploratory-driven approach study, the authors have analysed the growth CI and insurance literature trends from 2007 to 2022.

Thematic content analysis was used to examine the selected papers, and the 24 articles on CI and insurance were classified and coded with thematic codes. Our study discovered that countries produced a total of 24 peer-reviewed journal articles focusing on CI and insurance between 2007 and 2022 (see Table 1). This result implies that no single journal published more publications in CI and insurance.

Furthermore, our research found a significant increase in CI and insurance-related publications, particularly in the years 2011, 2014, 2017, 2018, and 2019. The distribution of papers published within these years was highest in 2014 and 2019, followed by 2017, 2018, and 2011 (see Figure 1). This finding aligns with Muritala and Ajetunmobi (2019), who opined that the current complex and dynamic business environment had advanced the necessity for CI practices in insurance businesses. Also, this finding shows that insurance companies have since changed their perspective to incorporate CI practices into their daily routines (Johns & Van Doren, 2010).

Notably, our study found a consistent and modest level of academic interest in the topics of CI and insurance in 2007, 2010, 2012, 2015, 2016, 2020, 2021, and 2022 (see Figure 1). These findings indicate that CI practitioners in the insurance industry are overburdened with professional obligations, leaving them with little time to document and publish their work. This finding signifies that CI practitioners in the insurance industry are overburdened with professional responsibilities, leaving them with little time to document and publish their work.

In concurrence, du Toit (2015) discovered that CI practitioners had a significant workload and were less likely to write about their CI activities. Furthermore, she opined that that the majority of prolific writers on CI were academics who taught CI courses at universities. Also, Barnea (2016) showed that the recent global slowdown had little impact on CI practices, with approximately 75% of organisations maintaining their CI programmes without significant changes.

In terms of the geographical distribution of published papers, our research found that Iranian authors were the most prolific contributors in the field of CI, with a particular emphasis on insurance. They were followed by South African and Nigerian authors. Furthermore, our research found a significant trend of geographic focus in CI-related publications, particularly those pertaining to insurance and businesses involving insurance (see Figure 2).

Consistently, Kuhn et al. (2020) found that 31 articles focused on applying CI in different industries. Notably, the rise in CI-related articles written by South African academics is not surprising. This observation is consistent with Kuhn et al.'s (2020) discovery that CI practises are still prevalent in South Africa. In fact, the country's CI field has been rapidly evolving, driven by a diverse range of academic interests in this domain. Furthermore, South African firms' CI practices appear to be more advanced when compared to firms in other African countries and emerging economies.

Notably, the increase in CI-related articles written by South African scholars is not surprising (see Figure 2). This observation is consistent with the findings of Kuhn et al. (2020), who documented the ongoing practice of CI in South Africa. The field of CI in the country has been rapidly evolving, driven by a diverse range of academic interests in the subject. However, CI practices for organisations operating in African countries have continued to be surprised by disruptions caused by changing business environments and are still trailing in managing intelligence by global standards (Strauss & du Toit, 2010).

In addition, our research found that authors from Brazil, Morocco, the USA, Europe, Kenya, and Spain had the fewest published articles in the field of CI specifically related to insurance. This finding contrasts with Amiri et al. (2017), who claimed that there was a growing demand for CI as companies adapted their services and marketing strategies to maintain effective performance.

Although Johns and Van Doren (2010) opined that insurance companies had adjusted their perspective to incorporate CI practices in their operation, our findings support the notion that CI practices in the insurance industry are intently focused on a few areas. Concurring, Odiachi et al.'s (2021) analysis showed that CI and organisational sustainability are concentrated in exclusive Nigerian insurance business areas.

In our analysis of publications with a specific focus on insurance, and those covering other sectors that included insurance, we discovered that Iranian authors were the most prolific in producing CI-related articles with an insurance focus. They were followed by authors from Nigeria, Brazil, and South Africa, with Kenyan authors having the fewest publications in this field. Furthermore, our research found that authors from these geographic regions authored 62.5% of peer-reviewed scholarly papers with an insurance focus (see Figure 3).

This finding is consistent with du Toit's (2015) observation that CI practitioners were preoccupied with their professional responsibilities, resulting in limited written contributions about their work. Conversely, academic authors associated with higher education institutions emerged as the most prolific contributors in this field. Additionally, it is worth noting that only two CI-related studies with an exclusive focus on insurance were published in 2011, both by the same authors.

In our extensive analysis of various industries, including the insurance sector, we discovered that South African authors were the most prolific contributors, publishing the greatest number of publications. They were followed by authors from the USA and Morocco, with Europe and Spain contributing the fewest articles in this category. Consequently, publications from these regions accounted for 37.5% of the total number of peer-reviewed articles across all industries, including insurance. This finding suggests that CI research in South Africa has primarily focused on examining

the skills, resources, and competencies associated with CI practices across organisations (Sewdass & du Toit, 2014).

Furthermore, the authors concluded that South Africa has demonstrated ongoing concerns about CI over the past 11 years, leading to a growing recognition of its importance within the country's business sector. In contrast, Kuhn et al. (2020) discovered that CI research focused on various academic domains, including skills. In addition, Pellissier and Kruger (2011a) and Sewdass and du Toit (2014) found that South African companies only employed CI practises primarily to address new and impending legislative trends, rather than proactively keeping abreast of domestic and international market trends that could potentially impact their operations.

In our analysis of the number of citations and methodologies employed in each article, our findings revealed that a significant portion of our sample comprised articles engaging in theory building, theory testing, and exploratory studies (see Table A.1). This prevalence of theory development and testing implies an increasing emphasis on the validation of new constructs and propositions in the field over time.

Remarkably, our analysis revealed that Iranian authors produced the most theory-testing studies, followed by Nigerian and Kenyan authors. The most common methods used in these studies were single case studies. Meanwhile, authors from South Africa, Nigeria, Morocco, Spain, and Europe conducted theory-building studies. Multiple case studies and single case studies were commonly used for theory-building studies (see Table A.1).

The results indicate that among the 88 papers related to CI published in peer-reviewed journals from 1999 to 2017 by South African academics, only four were classified as theory-building studies (Kuhn et al., 2020). This result indicates that South Africa's financial sector remains a significant player in the country's formalised CI practices. Moreover, South African firms have a greater presence of formal intelligence systems than other developing countries (Kuhn et al., 2020).

Furthermore, our research found that the most frequently cited articles in the field of CI and insurance were primarily written by Iranians, followed by authors from South Africa, Brazil, Nigeria, and Kenya. These findings imply that the most prolific writers in this domain are academics and scholars affiliated with higher education institutions, who frequently cite these articles in their research projects. This highlights the need for additional research in this area to establish causal relationships between CI and insurance.

In contrast, the United States had the most cited articles across all industry sectors, closely followed by South Africa, Europe, Morocco, Spain, and Brazil. These findings suggest that the literature on CI and insurance is widely dispersed and published in a variety of journals, reflecting its diverse nature and widespread distribution across various geographic regions.

Our in-depth examination of the cumulative knowledge of CI across various industries, including insurance, reveals notable patterns in the distribution of published papers. Specifically, the years 2014 and 2019 had the highest number of publications, indicating a greater emphasis on CI during those years. The years 2017, 2018, and 2011 were close behind, with a significant volume of academic contributions in this field.

In contrast, our research found a consistent and modest level of scholarly publications in the majority of the years. Importantly, these findings are consistent with our previous observations and analyses presented in Figure 1. Additionally, these findings highlight the importance of future research endeavours that investigate the practical application of CI in both developed and developing countries. By bridging the gap between academia and industry, such research can facilitate the widespread implementation of CI practices across various organisations and sectors.

6. CONCLUSION

In recent years, the field of CI has grown from a small science to a global phenomenon. Since then, most organisations have formed CI associations and have developed capabilities to obtain and monitor CI (Calof et al., 2018). In so doing, organisations have increased CI and become capable of analysing their environment more accurately, storing the results, and providing decision-makers with useful information as needed (Atkinson et al., 2022). A key component of CI uses technology, such as software that gathers customer feedback and business analytics (Ashrafi et al., 2019).

Data is at the heart of insurance, but the industry requires the right analytical tools, such as CI, to take advantage of it entirely. However, recent insurance industry research indicated that insurers tend to be more concerned with optimising internal costs than improving value delivery to customers (Pugnetti & Seitz, 2021). CI has transformed many other industries, but insurance has not yet fully tapped its potential.

Despite this, insurance companies struggle to capture and analyse big data generated by individuals and networks after the customer life cycle has ended. A lack of value-added services, too much information, and a lack of ability to improve their commercial performance continue to inhibit growth for the insurance industry (Oyomo, 2019).

Consequently, most insurance companies neglect CI, resulting in challenges in the competitive market. Insurance companies should incorporate CI in every aspect of their operation to anticipate future threats and identify new growth opportunities (Odiachi et al., 2021). CI processes should be implemented to uncover unknown customers and hidden knowledge since data and analytics offer substantial insight and opportunities for insurance companies (Oraee et al., 2020). A further benefit of CI is that it can help insurers improve their product offerings and better understand their customers by converting big data into actionable insights (Oyomo, 2019).

Since CI is most commonly applied to incorporate big data tools and techniques into CI strategies to extract valuable knowledge, this study included a thorough literature assessment of CI and insurance in various countries by selecting and analysing 24 peer-review journal articles published between 2007 and 2022.

Despite years of developing research on CI and insurance, academic interest remains low. The study also found a modest and constant academic interest in CI. In addition, our study found that Iranian authors were the most prolific contributors to CI-related articles with an insurance focus. They were followed by authors from Nigeria, Brazil, and South Africa.

In tandem, our study showed that South African authors were the most prolific contributors, publishing the greatest number of publications. They were followed by authors from the USA and Morocco.

The number of citations and methodologies employed in each article revealed that Iranian authors produced the most theory-testing studies with single case studies methods, followed by Nigerian and Kenyan authors. Conversely, theory-building studies with multiple and single case studies were more prevalent among South African, Nigerian, Moroccan, Spanish and European authors.

Furthermore, our study showed that the most frequently cited articles in the field of CI and insurance were primarily authored by Iranians. They were followed by authors from South Africa, Brazil, Nigeria, and Kenya. Meanwhile, the USA had the most cited articles across all industry sectors, closely followed by South Africa, Europe, Morocco, Spain, and Brazil.

Equally, our study found an incremental trend in the distribution of published papers on CI across various industries between 2014 and 2019. The years 2017, 2018, and 2011 were close behind, with a significant volume of academic contributions in this field. While other years showed a consistent and modest level of scholarly publications in the majority of the years.

The study's essential contribution has been to present an overview of the status and trends in the literature by categorising articles based on theoretical viewpoints, research subjects, and countries. A significant contribution comes from the paper's historical distribution of published scholarly articles.

Our research showed that most articles were single case studies. With the insurance sector becoming increasingly international, we believe that studies in various countries should be taken more seriously. Cross-country comparisons of multinational insurance companies can reveal the contextual and organisational factors influencing CI adoption and implementation.

In addition, comparative case studies may help insurance companies worldwide better understand the steps necessary to implement CI processes. Further, we found that CI research in the insurance industry is still in the very early stages of development. Research in this area needs to be tested more thoroughly before maturity can be achieved. In addition, exploratory studies have played a significant role, but no suggestive theory has been outlined. Efforts should be made to make future exploratory studies more theoretically relevant. Furthermore, we found that most studies were quantitative.

Researchers might be able to contribute more substantive theoretical contributions by using mixed research methods. Also, more studies should explore conceptual frameworks for theory testing and the use of data analytic tools to test the predictive accuracy and relevancy of the research models.

This article has identified literature gaps while pointing to potential areas for future research. The study has limitations that should be highlighted. To begin, the authors restricted their search to CI and insurance articles using Academic Search Complete, Google Scholar, and EBSCOhost.

Our sample may have overlooked articles in other publications that use other databases from different fields. Furthermore, our research was limited to peer-reviewed academic journals, and we did not include book chapters or conference proceedings in our search. Nonetheless, we authors believe that the articles chosen are adequate for addressing a wide range of research-related concerns. However, we might have overlooked important publications with different keywords because we utilised various search terms to cover all aspects of CI and insurance.

Our recommendations for future study are based on the literature analysis, leaving little room for invention. However, we believe our method is appropriate because we have assured the process's trustworthiness by following transparent stages. The authors emphasise that content analysis may be versatile and offer various analytic possibilities. Still, it may not reveal a research pattern's underlying causes and consequences. Similarly, Maritz and du Toit (2018) argued that thematic content analysis had limited interpretive value. Future research may benefit from triangulation by combining different methodologies.

Although scholars have intensively researched CI for decades, Iranian authors are constantly investigating and developing CI and insurance literature compared to their global peers. We identified literature gaps regarding the relationship between CI and insurance by country and proposed future research topics in this area. We believe our research will fill significant gaps in the literature, serving as a springboard for future academics.

As a final note, CI-related studies in insurance should address emerging trends that will likely affect CI implementation in the future. Implementing CI processes in the insurance sector will be transformed by advances in information technology, artificial intelligence, and big data. Future research opportunities will undoubtedly arise from such topics.

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APPENDIX

Table A.1. CI articles and methodologies (Part 1)

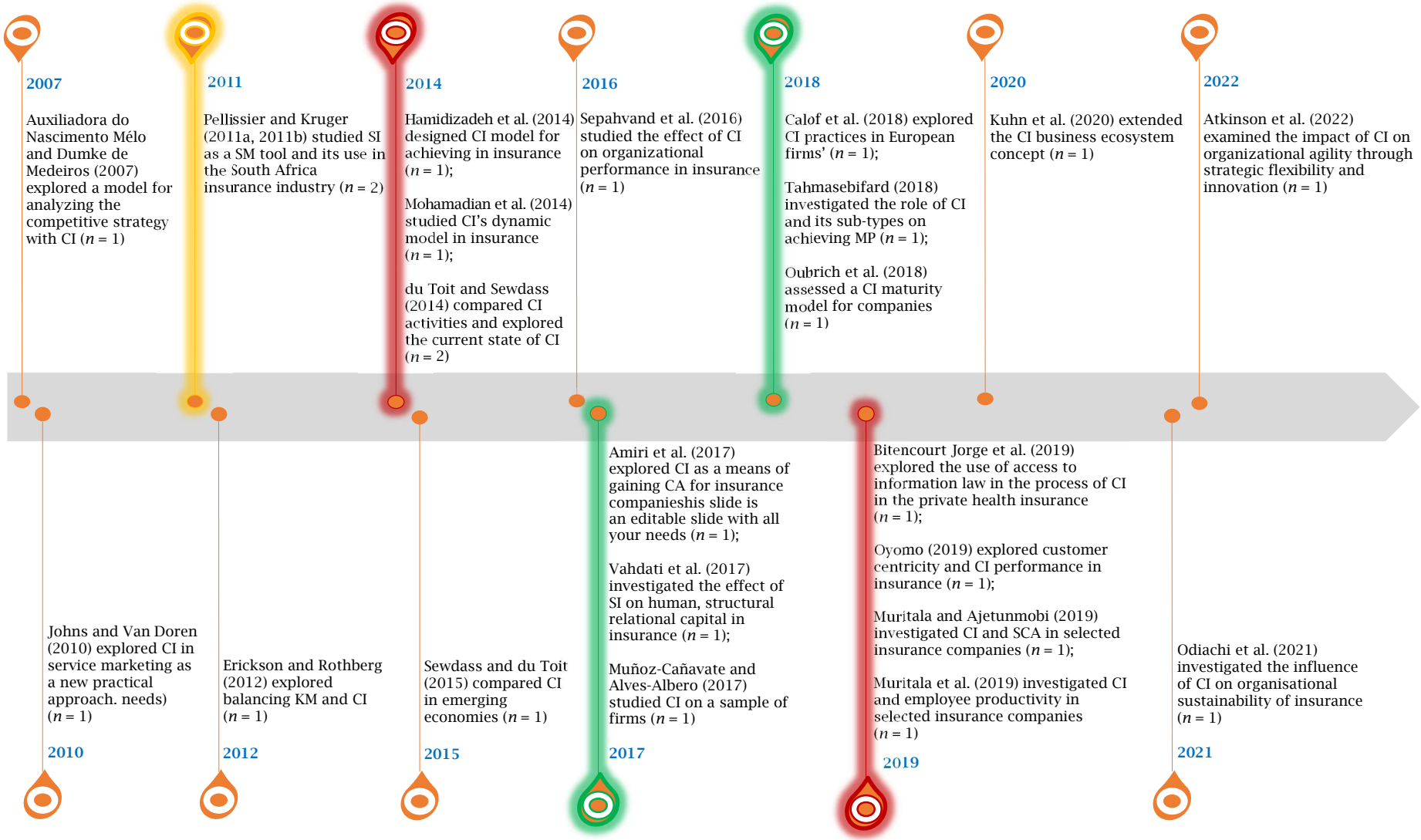
No.	*Article title*	*Author*	*Geographic focus*	*Industry focus*	*Citations*	*Research methods*	*Research type*	*Case studies*	*Data analysis*
1	A model for analyzing the competitive strategy of health plan insurers using a system of competitive intelligence	Auxiliadora do Nascimento Mélo and Dumke de Medeiros (2007)	Brazil	Insurance	12	Applied qualitative	Exploratory	Single	None
2	Use of access to information law in the process of competitive intelligence in the context of the private health in Brasil: An analysis in SulAmerica Insurance	Bitencourt Jorge et al. (2019)	Brazil	Insurance	1	Qualitative	Exploratory	Single	None
3	Competitive intelligence practices of European firms	Calof et al. (2018)	Europe	All	83	Quantitative	Theory building	Multiple	None
4	Providing a model for achieving sustainable competitive advantage based on competitive intelligence in insurance industry and evaluating affecting indices and dimensions	Hamidizadeh et al. (2014)	Iran	Insurance	2	Quantitative	Theory testing	Single	SEM-LISREL
5	Studying the dynamic model of the competitive intelligence in insurance industry considering time factor	Mohamadian et al. (2014)	Iran	Insurance	0	Quantitative	Theory testing	Single	SEM-AMOS
6	The effective of competitive intelligence on organizational performance through orientation (Case study: Insurance Companies Sanandaj)	Sepahvand et al. (2016)	Iran	Insurance	10	Quantitative	Theory testing	Single	PLS-SEM
7	Competitive intelligence and developing sustainable competitive advantage	Amiri et al. (2017)	Iran	Insurance	59	Quantitative	Theory testing	Single	PLS-SEM
8	The survey of the effect of strategic intelligence on human capital, structural capital and relational capital in insurance industry	Vahdati et al. (2017)	Iran	Insurance	1	Quantitative	Theory testing	Single	SEM-AMOS
9	The role of competitive intelligence and its sub-types on achieving market performance	Tahmasebifard (2018)	Iran	Insurance	36	Quantitative	Theory testing	Single	SEM-AMOS
10	Attaining organisational agility through competitive intelligence: The roles of strategic flexibility and organisational innovation	Atkinson et al. (2022)	Iran	Insurance	21	Quantitative	Theory testing	Single	PLS-SEM
11	Customer centricity and competitive intelligence performance in the insurance industry in Western Kenya	Oyomo (2019)	Kenya	Insurance	1	Quantitative	Theory testing	Single	SPSS
12	Competitive intelligence in Morocco	du Toit and Sewdass (2014)	Morocco	All	16	Qualitative	Exploratory	Multiple	None
13	Development of a competitive intelligence maturity model: Insights from Moroccan companies	Oubrich et al. (2018)	Morocco	All	19	Quantitative	Theory building	Multiple	SPSS
14	Competitive intelligence and sustainable competitive advantage of selected insurance companies in Nigeria	Muritala and Ajetunmobi (2019)	Nigeria	Insurance	4	Quantitative	Theory building	Single	SPSS
15	Competitive intelligence and employee productivity of selected insurance companies in Nigeria	Muritala et al. (2019)	Nigeria	Insurance	1	Quantitative	Theory building	Single	SPSS
16	Driving organisational sustainability in the Nigerian insurance sector: The role of competitive intelligence	Odiachi et al. (2021)	Nigeria	Insurance	0	Quantitative	Theory testing	Single	SEM-AMOS
17	A study of strategic intelligence as a strategic management tool in the long-term insurance industry in South Africa	Pellissier and Kruger (2011a)	South Africa	Insurance	53	Quantitative	Theory building	Single	SPSS
18	Understanding the use of strategic intelligence as a strategic management tool in the long-term insurance industry in South Africa	Pellissier and Kruger (2011b)	South Africa	Insurance	29	Quantitative	Theory building	Single	SPSS

Table A.1. CI articles and methodologies (Part 2)

No.	*Article title*	*Author*	*Geographic focus*	*Industry focus*	*Citations*	*Research methods*	*Research type*	*Case studies*	*Data analysis*
19	Current state of competitive intelligence in South Africa	Sewdass and du Toit (2014)	South Africa	All	100	Quantitative	Theory building	Multiple	None
20	Competitive intelligence in emerging economies: A comparative study between Brazil and South Africa	Sewdass and du Toit (2015)	Brazil and South Africa	All	10	Quantitative	Theory building	Multiple	SPSS
21	The business anticipatory ecosystem outside the "first world": Competitive intelligence in South Africa	Kuhn et al. (2020)	South Africa	All	5	Applied Qualitative	Exploratory	Multiple	None
22	Competitive intelligence in Spain: A study of a sample of firms	Muñoz-Cañavate and Alves-Albero (2017)	Spain	All	17	Quantitative	Theory building	Multiple	None
23	Balancing knowledge management and competitive intelligence, initial insights	Erickson and Rothberg (2012)	USA	All	6	Qualitative	Exploratory	Multiple	None
24	Competitive intelligence in service marketing: A new approach with practical application	Johns and Van Doren (2010)	USA	All	103	Qualitative	Exploratory	Multiple	None
	Total				589				

Source: Authors' elaboration.

Figure A.1. Historical contribution to CI literature



Note: SI — Strategic intelligence, SM — Strategic management, MP — Market performance, CA — Competitive advantage, KM — Knowledge management.
Source: Authors' compilation.