

# COMPETITIVE INTELLIGENCE FORMALISATION IN THE PROPERTY SECTOR: THE EMERGING MARKET STUDY

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## Abstract

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Competitive intelligence (CI) enhances the quality of products or services and decision-making (Tarek et al., 2017). Despite formalisation having been identified as a cornerstone for CI, firms continue to practice it informally (Cavallo et al., 2021). Although CI formalisation has been investigated in other economic industries in South Africa, no study on the formalisation of CI has been conducted in the real estate sector (Cavallo et al., 2021). The objective of this research was to establish the formalisation of CI in the South African real estate sector. This research followed a quantitative research methodology using a web-based questionnaire to collect data from property practitioner firms in the South African real estate sector. The South African real estate sector is very competitive and firms practice CI to gain competitive advantage over their rivals. The findings indicate that the majority of property practitioner firms practice CI formally using different application software. However, the results indicate that property practitioner firms lack a CI system and do not appoint CI professionals. Although the majority of firms do not have a CI system and do not appoint CI professionals, they practice CI formally and use different application software during practice.

**Keywords:** Competitive Intelligence, Competitive Intelligence Formalisation, Search Engines, Web Browsers, Social Networks, Application Software

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## 1. INTRODUCTION

Post-apartheid, after a recession and a drop in global competitiveness ranking, South Africa relies on different sectors to raise its competitiveness (Property Practitioners Regulatory Authority [PPRA],

2020; Schwab & Zahidi, 2020). The real estate sector of South Africa creates jobs, and wealth, reduces poverty, and contributes to skills development and economic growth (PPRA, 2020). The sector is known to contribute approximately R191.4 billion to the South African economy (Portfolio Property

Investment [PPI], n.d.). Moreover, the property sector fulfils the constitutional right of the public with regard to owning a home (PPRA, 2019). To grow in a highly competitive sector such as South African real estate, businesses seek tools that provide a competitive advantage. It has been concluded that competitive intelligence (CI) offers a competitive advantage to businesses (Hartmann & Leberherz, 2017). Furthermore, CI supports firms in making quality decisions (Xue et al., 2017). CI enhance the quality of products, services and life (Tarek et al., 2017). CI is a critical success factor for businesses (Tarek et al., 2017). Despite formalisation having been identified as a cornerstone of CI, it is widely reported that most firms practice CI informally (Fatti & du Toit, 2013). While CI formalisation has been researched in other sectors and there is a constant cry for further research in CI practice, there is a lack of research in the real estate sector of South Africa (Asri & Mohsin, 2020). Thus, there is a gap in the literature regarding the formalisation of the CI process in the real estate industry.

Hence this study aimed to establish the formalisation of CI in the real estate sector of South Africa. The study used a quantitative research method to collect data through a web-based questionnaire. This study aimed to answer the following questions:

*RQ1: What is the level of CI awareness and practice in the real estate sector of South Africa?*

*RQ2: What is the level of CI formalisation in the real estate sector of South Africa?*

*RQ3: What is the level of competitiveness and competitive advantage brought about by CI in the real estate sector of South Africa?*

*RQ4: What are the CI formalisation tools used in the South African real estate industry?*

The findings confirmed CI practice in the real estate sector of South Africa. In addition, the findings revealed that the South African property sector practices CI and follows a formal process. Moreover, the findings indicate that the South African property sector is very competitive. Hence, firms practice CI using different application software to gain a competitive advantage. High competition in the sector could be associated with CI practice (PPRA, 2020). CI can be associated with conflict theory which was first developed by Karl Marx. According to the conflict theory, society is in continual conflict because of competition for limited resources (Kühne et al., 2019). Firms desire power to dominate the industry they operate. CI gives firms the edge to potentially dominate an industry (Cavallo et al., 2021).

The rest of this paper is structured as follows. Section 2 discusses the review of relevant literature. Section 3 describes the research methodology followed in the study. Section 4 analyses the results of this study. Section 5 discusses the findings. Section 6 makes conclusions and recommendations of the study.

## 2. THEORETICAL BACKGROUND

The world is characterized by limited resources. Firms, people, countries, for-profit and non-profit, small and large organisations compete for these limited resources. Competition for limited resources relates to the conflict theory by Karl Marx. According

to the conflict theory, society is in continual conflict because of competition for limited resources (Kühne et al., 2019). To increase the chances of succeeding in competing for these limited resources, firms seek for competitive advantage (Dar et al., 2021). It has been concluded that CI supports decision-making and gives firms a competitive advantage over their rivals (Maune, 2021).

CI has its origin in many fields, namely, strategic management, information management, information sciences, library and military (Sassi et al., 2015). While others consider CI as an infant, it has been there for many years. In the military, CI has been used to establish what the enemy intends to do in order to counter it (Ncube & Ndlovu, 2022). In strategic management, CI is used for decision-making with the aim of gaining a competitive edge over rivals (Ncube & Ndlovu, 2022). It has been concluded that CI is dominant in very competitive industries, e.g., information and communications technology (Nenzhelele, 2016). Over the years, research has indicated that most if not all industries practice CI formally or informally (Maune, 2021). Thus, some firms practice CI intentionally following a formal process while others do it unaware without following a formally recognized process (Fatti & du Toit, 2013). It has been concluded and recommended that formal practice by a professional enhances the quality of CI (Xue et al., 2017).

There is a lack of research in the real estate sector globally. Research in the South African real estate sector focused on CI awareness, practice and challenges (Asri & Mohsin, 2020). A review conducted by Asri and Mohsin (2020) reveals that the South African and Moroccan real estate industry practices CI. The Canadian real estate construction contractors practice CI (Safa et al., 2015). Gutt et al. (2019) established the practice of real estate firms in the United States of America. AlBahsh (2022) constructed a CI process model for the big data era based on the real estate industry of the United Arab Emirates. Although there are other studies in the real estate industries conducted in other countries, they are not as many as one would expect given the sector's contribution to the global GDP. Hence this study intended to add to the existing literature on CI in the real estate sector.

### 2.1. Definition of competitive intelligence

CI has many definitions which can be found in the existing literature. Some definitions refer to CI as a product while others deem it a process (Brody, 2008). According to Brody (2008), this definition may differ solely on positions of words, emphasis and use of synonyms (Brody, 2008). Fleisher and Wright (2009) conclude that CI practitioners do not have time dedicated to defining the field hence there is no agreement on the definition based on practice. Too many definitions lead to confusion and a borderless field (Haddadi et al., 2010). Colakoglu (2011) posits that CI scholars and practitioners are confused due to so many definitions. The lack of a universal definition of CI confuses CI with industrial espionage (Colakoglu, 2011). Hence, however, Haliso and Aina (2012) argue that CI is both legal and ethical and that it should not be confused with industrial espionage. Taking cognisance of too many definitions, Pellissier and Nenzhelele (2013b)

analysed fifty CI definitions to propose a universal one for the field or practice. After careful analysis of the 50 definitions, Pellissier and Nenzhelele (2013b) define CI as “a process or practice that produces and disseminates actionable intelligence by planning, ethically and legally collecting, processing and analysing information from and about the internal and external or competitive environment in order to help decision-makers in decision-making and to provide a competitive advantage to the enterprise” (p. 5). This definition was adopted for the purpose of this study.

## 2.2. Competitive intelligence process

The definition of CI indicates that it is a process with a set of activities to transform collected data/information into actionable intelligence (Cavallo et al., 2021). CI process phases are interlinked. Thus, the output of the previous phase is the input of the next phase (Bartes, 2014). Actionable intelligence is the output of the CI process (Diyao, 2019). Although there has been some confusion on the phases of the CI process, there is some level of agreement. After analysis of several CI process models, Pellissier and Nenzhelele (2013a) proposed the following phases of the CI process: 1) planning and direction; 2) information collection; 3) information sorting, capturing and storing; 4) information analysis; and 5) intelligence dissemination. The successful execution of each phase is influenced by process and structure; organisational awareness and culture; decision-makers; and feedback. Moreover, CI practitioners need the necessary skills and capabilities to perform CI process phases (Priporas, 2019).

## 2.3. Competitive intelligence formalisation

South African firms are poor, and ill-equipped to practice CI and practice CI informally (Yap & Rashid, 2011). Salguero et al. (2017) further conclude that formalised CI is relatively new and requires the buy-in of the managers of the organisations. Formalisation is a keystone of CI (Cavallo et al., 2021). Muñoz-Cañavate and Hípola (2017) conclude that firms are failing to practice CI in a professional and diligent manner. A formal CI infrastructure earns a return on investment for a firm (Cavallo et al., 2021). Large firms practice CI more formally than their smaller counterparts (Søilen, 2017), compromising the quality of the CI and subsequently the quality of the decisions based on the CI (Poblano-Ojinaga et al., 2019). To gain a competitive advantage and make quality decisions, van den Berg et al. (2020) recommend that firms must practice CI formally rather than informally. However, firms tend to be more focused on cost-cutting than the benefits of a formalised CI (Chawinga & Chipeta, 2017). Firms lack formal CI procedures because they do not appoint CI professionals (Köseoglu et al., 2019). The formalisation of CI is associated with established functions, procedures, processes and systems (Frey & Farley, 2020). The formalisation of CI includes the use of application software (Ranjan & Foro, 2021). It also refers to the establishment of a department and the appointment of trained CI professionals (Maungwa & Fourie, 2018).

## 2.4. Formalising competitive intelligence through information and communication technology

Hardware and software solutions are available to enhance CI practice (Semerkova et al., 2017). Information and communication technologies (ICTs) such as the Internet and related technologies, for example, Internet browsers, search engines and social networks help facilitate CI practice. The Internet and its applications are valuable sources of information for CI. Those who use the Internet regularly use social networks, enabling the collection of information and dissemination of intelligence (Fernández-Arias et al., 2017). The Internet also enables customers, competitors, government and community organisations to share information easily (Degaut, 2015). Websites, search engines and open databases are all sources of information for CI (Sun & Wang, 2015). Cantonnet et al. (2014) established that businesses frequently use websites and search engines to source information for CI. Search engines are able to find relevant information for CI (Olszak, 2014; Musadek et al., 2014; Campos et al., 2014). Search engines such as Google and Yahoo are frequently used to search for information for CI (Wright et al., 2012; Bisson, 2014). The following are the top fifteen web browsers in the world respectively: Chrome, Firefox, Safari, Internet Explorer, Opera, Torch, Maxthon Cloud, Avant, Dragon, Sea Monkey, Yandex, Lunascape, Slim, U, and Slim Boat (Clayton, 2022). In no particular order, the following are the top fifteen search engines in the world respectively: Google Search, Baidu, Bing, Yandex, Yahoo!, DuckDuckGo, Ask.com, Boardreader, WolframAlpha, Naver, Startpage, Qwant, Ecosia, Disconnect Search, and Search (Gallimore, 2024). In no particular order, the following are the top fifteen social networks in the world respectively: Facebook, WhatsApp, YouTube, Messenger, WeChat, Qzone, Instagram, Tumblr, Reddit, Twitter, LinkedIn, Skype, Snapchat, Pinterest, and Line (Girdhar, 2023).

As part of formalising their CI, firms are using every technology readily available (Jin & Ju, 2014). Different computer applications, such as Microsoft Office, are used by businesses when practising CI (Wu et al., 2023). Businesses, more especially large organisations have CI software, which can analyse social networks, content and other types of intelligence (Roche & Blaine, 2015). CI software also collects, analyses and disseminates information, is linked to the internet and makes CI effective (Fatoki, 2014). CI software adds meaning to CI (Muguirra, 2014).

Firms can easily practice CI over social networks (Nasri, 2011; Arcos, 2013). Social media is defined by Kaplan and Haenlein (2010) as “a group of internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content” (p. 61). Social media makes it easier for firms to do business and brand themselves (Chan et al., 2014). It offers real-time information from status updates, page updates and profile updates and allows marketers, developers and general users to meet, presenting opportunities for CI (Arcos, 2013; Musadek et al., 2014). Musadek et al. (2014) and Muguirra (2014) conclude that information collected from social media is useful for CI because it has become part of daily life and almost everyone with a digital device knows how to use it. Dar and Shah (2013) conclude that people practically live online.

## 2.5. South Africa property sector

The South African property sector enables the economy and wealth creation for future generations (PPRA, 2020). The real estate sector of South Africa creates jobs, and wealth reduces poverty and contributes to skills development and quality of life. It facilitates inheritance hence it attracts investors (PPRA, 2019). According to the PPRA (2020), the real estate sector fulfils the constitutional rights of South Africans.

Hence, from year to year, there has been an increase in principal and non-principal agents, firms and attorneys registered with the PPRA (PPRA, 2020). The increase in the number of property practitioners' firms may be associated with high competition in the sector (PPRA, 2021). To survive in this very competitive sector, firms are listing property on applications available on Apps stores and the Internet. This makes the property easily accessible and viewable by consumers (PPRA, 2022).

The real estate sector of South Africa is regulated and controlled by the PPRA previously known as the Estate Agency Affairs Board (EAAB) (Property Practitioner Act No. 22 of 2019). The EAAB was established in 1976 in terms of the Estate Agency Affairs Act 112 of 1976. The core mandate of the PPRA is the following five key regulatory pillars, namely education, registration, disciplinary, inspections and investigation, and claims and its industry supervisory role in terms of the Financial Intelligence Centre Act (PPRA, 2020). The PPRA is responsible for issuing a Fidelity Fund Certificate (FFC). The FFC is renewable every year and serves as evidence of registration. The FFC gives a holder the legal rights to operate in the real estate sector of South Africa (PPRA, 2022).

The PPRA collaborates with other organisations to fulfil its mandates (PPRA, 2022). The PPRA works with the following organisations: the National Consumer Commission, the Independent Regulatory Board for Auditors, the Financial Services Board, the Service SETA, the Banking Association of South Africa, the Black Conveyancers Association and the Financial Intelligence Centre (FIC). The PPRA is a member of the Association of Real Estate Licence Law Officials (ARELLO) and the international organisation of real estate regulators. Its membership to ARELLO makes the PPRA open opportunities for the South African real estate sector to compete globally. This makes the real estate sector of South Africa competitive, attractive, secure and safe for international investors (PPRA, 2020). To strengthen its competitiveness, the real estate sector of South Africa practices CI (Nenzhelele, 2016).

## 3. RESEARCH METHODOLOGY

There are three types of research designs, namely, qualitative, quantitative and mixed method (Saunders et al., 2019). According to Saunders et al. (2019), quantitative research generates factual and reliable data that can be generalised to a larger population. Qualitative research produces data that is rich, detailed and comprehensive based on the participant's perspective instead of that of the researcher. However, qualitative research data cannot be generalised to the larger population due to the nature of the smaller sample. This research followed a quantitative research method and used

a web-based questionnaire to collect data from the property practitioner firms. Academics knowledgeable in the field of CI validated the questionnaire. Their assessment of the questionnaire found that it measured what it intended to measure. To establish the level of agreement with statements about competitiveness, competitive advantage, CI awareness, practice and formalisation, a 5-point Likert scale was used. The scales ranged from strongly disagree to strongly agree. A well-known South African real estate website was used to source contact details of 3,878 property practitioner firms.

There are two types of sampling, namely, probability and non-probability sampling. Probability sampling gives every subject an equal opportunity to be selected. Non-probability sampling does not give the subjects an equal opportunity to be selected (McCombes, 2023). This research followed probability sampling, specifically, random sampling. According to Cordoni (2011), a sample of about 350 is suitable for a population of approximately 3000 in order to achieve a 95% degree of confidence. Hence this research sampled 350 property practitioner firms. The link to the web-based questionnaire was sent to the sampled property practitioner firms via e-mail. By completing the questionnaire, the property practitioners consented to their responses being used for the purpose of this study. The respondents' participation was voluntary and they could withdraw at any given time without consequences. The web-based questionnaire ensured the confidentiality of the collected data. For every e-mail that sent back a delivery failure, a new estate agency was sampled to replace it. To increase the response rate, reminder e-mails were sent to sampled property practitioner firms. Two hundred and forty-two responses were received yielding a 69.14% response rate. Of the 242 responses, 239 were complete and usable. It took a period of one month to collect the data. For analysis purposes, data collected through the web-based questionnaire was exported to a spreadsheet. The validity of the data was tested using exploratory factor analysis. Cronbach's alpha was used to assess the reliability of the data. Descriptive statistics, namely, mean and standard deviation were used to analyse the data.

## 4. RESEARCH RESULTS

This section discusses and analyses the results of this study highlighting demographics, validity and reliability of data. It further discusses and analyses the descriptive statistics of the results in order to establish a central tendency. This is then followed by the frequency of the tools used for CI.

### 4.1. Demographics of property practitioners' firms

Firms that participated in this research were partnerships (4.43%); sole proprietorships (23.65%); close corporations (29.06%); and companies (42.86%). There are nine provinces in South Africa. Most of the property practitioner's firms operate their businesses in the Western Cape (28.57%) and Gauteng (40.39%). The other provinces were represented as follows: Northern Cape (1.97%); North West (2.96%); Limpopo (2.96%); Mpumalanga (3.45%); Eastern Cape (3.45%); Free State (7.39%); and KwaZulu Natal (8.87%). Their focus areas were

rentals only (2.96%), sales only (28.57%), and property rentals, sales, management and development (68.47%). A large number of property practitioners' firms were very small with 1 to 5 employees (45%). The rest of the property practitioners' firms had 201 or more employees (1.48%); 20 to 200 employees (2.96%); 21 to 50 employees (5.42%); 11 to 20 employees (15.27%); and 6 to 10 employees (29.56%). Financially, a larger number of property practitioner firms (36.95%) were making a total annual turnover of R1m to R5m. The rest of the property practitioners' firms had the following turnover: R51m to R64m (1.48%); R31m to R50m (1.48%); R21m to R30m (5.91%); R6m to R10m (9.36%); more than R64m (12.32%); and less than R1m (32.51%). The majority of the property practitioners' firms have been operating their business for 6 or more years (60.59%). The other property practitioner firms had been in operation for less than 1 year (3.94%); 1 to 3 years (10.34%); and 3 to 5 years (25.12%). The majority of the respondents were owners/managers of property practitioner firms (82.18%). The other respondents were competitive intelligence professionals (0.50%); sales/marketing managers (6.93%); and property practitioners (10.40%).

**4.2. Data validity and reliability**

Exploratory Factor Analysis (EFA) was used to test the validity of collected data in this study. EFA produces a combination of a smaller number of original factors that may fulfil the objective of the study (Garson, 2009). A minimum sample of 60 respondents is suitable for analysis in a quantitative study (Hair et al., 1998). This study is suitable for further analysis as it achieved 239 responses.

The Kaiser-Meyer-Olkin (KMO) index was used to establish commonality between variables. The values of the KMO index range from 0 to 1 and 0.50 or more is regarded as suitable for further analysis. It is implied that a KMO index of 0.50 or more makes a significant contribution. The significance is tested using Bartlett's test of sphericity. The study makes a significant contribution if the  $p \leq 0.05$ . The variables of this study's variables have a KMO index value of 0.899 and a  $p \leq 0.05$ . This warrants further analysis of the study. The KMO index and Bartlett's test of sphericity of this study are shown in Table 1.

**Table 1.** Kaiser-Meyer-Olkin index

<i>Kaiser-Meyer-Olkin index and Bartlett's test</i>		
KMO measure of sampling adequacy		0.899
Bartlett's test of sphericity	Approx. Chi-squared	2216.298
	df	190
	Sig.	0.000

Source: Author's calculations.

To extract factors about the formalisation of CI practice in the real estate sector of South Africa, the principal components analysis (PCA) is used. The most commonly used criteria for extracting valid factors are the Kaiser's criteria (eigenvalue > 1 rule), the Scree test and the rotation method (Williams et al., 2010). Four strong factors with an eigenvalue greater than 1 are shown in Table 2. According to the eigenvalue > 1 rule, these factors qualify for extraction. However, Linacre (2005) recommends eigenvalue greater than 1.4 is valid in PCA, avoids noise or random errors and maintains the strongest variables. Hence, this study used a cut-off point of 1.4. Thus, only three factors qualify to be extracted in this study.

**Table 2.** Factor extraction using principle component analysis

Component	Total variance explained								
	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	7.370	36.848	36.848	7.370	36.848	36.848	4.474	22.369	22.369
2	2.054	10.272	47.120	2.054	10.272	47.120	3.692	18.458	40.827
3	1.548	7.738	54.858	1.548	7.738	54.858	2.711	13.556	54.383
4	1.168	5.841	60.699	1.168	5.841	60.699	1.263	6.316	60.699
5	0.988	4.940	65.639						
6	0.834	4.168	69.807						
7	0.767	3.835	73.642						
8	0.635	3.173	76.815						
9	0.578	2.890	79.705						
10	0.536	2.682	82.386						
11	0.506	2.528	84.915						
12	0.461	2.304	87.218						
13	0.443	2.216	89.434						
14	0.407	2.035	91.469						
15	0.367	1.833	93.302						
16	0.342	1.711	95.013						
17	0.296	1.479	96.492						
18	0.268	1.341	97.832						
19	0.225	1.126	98.958						
20	0.208	1.042	100.000						

Note: Extraction method: Principal component analysis.  
Source: Author's calculations.

It is recommended that factors with more items loading be retained and eliminate those with fewer elements. Furthermore, it is recommended that factors loading at a minimum of 0.3 be retained and those below 0.3 be eliminated (Tabachnick & Fidell, 2007). It is concluded that factors with three

or more items loading be maintained and those with less than three be eliminated as they are considered weak and unstable (Costello & Osborne, 2005). This study retains factors with an eigenvalue  $\geq 1.4$  and has a minimum of 3 items loading at 0.4. Thus, this study extracted and retained three factors for

further analysis. These factors are namely, competitive intelligence awareness and practice (factor 1); competitive intelligence formalisations (factor 2); and competition information and competitive advantage (factor 3). These factors have

eigenvalue that ranges between 7.370 and 1.548. The total variance for these three factors accounts for 54.858%. The percentage of variance accounted for these factors ranges between 36.848 and 7.738. Table 3 indicates the items loading per factor.

**Table 3.** Item loading per factor

<i>Rotated component matrix<sup>a</sup></i>				
<i>Items loading for competitive intelligence formalisation</i>	<i>Component</i>			
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
We are aware of competitive intelligence.	0.733			
We practice competitive intelligence in our business.	0.842			
Our employees understand what competitive intelligence is.	0.745			
Our managers support competitive intelligence practice.	0.792			
Our business has a formalised competitive intelligence function.	0.504	0.640		
We collect information about our competitors and analyse it.	0.485	0.460		
We have a formalised competitive intelligence process.		0.684		
We gather competitive intelligence for decision-making.	0.546	0.428		
We know the prices of our competitors' products or services.			0.637	
We know who our competitors' customers are.			0.735	
We know our competitor's strengths and weaknesses.			0.765	
We know who our competitors' suppliers are.			0.692	
We hire people or other businesses to collect information on our behalf.		0.643		0.420
We have competitive intelligence professionals in our business.		0.745		
We have a computerised competitive intelligence system.		0.752		
Competition is too high in our business sector.				0.696
Competitive intelligence provides us with a competitive advantage over our rivals.			0.463	
We practice competitive intelligence legally and ethically.	0.661			
We process and store information collected for competitive intelligence.	0.439	0.554		
We measure the impact of our competitive intelligence on profit.		0.575		

Note: Extraction method: Principal component analysis. Rotation method: Varimax with Kaiser normalization. a. Rotation converged in 7 iterations.

Source: Author's calculations.

The Cronbach's coefficient alpha is the most commonly used to test internal consistency (DeVellis, 2006). Its measurements range from between 0 and 1. A value that is less or equal to 0.6 is considered unsatisfactory internal consistency reliability (Malhotra, 2004). According to O'Leary-Kelly and Vokurka (1998), coefficients greater or equal to 0.70 indicate high reliability of

the measuring instrument. DeVellis (1991) propose the following criteria for judging Cronbach's alpha results: above 0.8 (good); between 0.6 and 0.8 (acceptable); and below 0.6 (unacceptable). Table 4 indicates that all the factors are good and reliable as their Cronbach's alpha is greater than 0.8. The overall Cronbach's alpha for this study is 0.895 and therefore very reliable.

**Table 4.** Factor reliability

<i>Item-total statistics</i>				
<i>Competitive intelligence formalisation variable items</i>	<i>Scale means if an item deleted</i>	<i>Scale variance if item deleted</i>	<i>Corrected item-total correlation</i>	<i>Cronbach's alpha if the item deleted</i>
We are aware of competitive intelligence.	66.28	116.495	0.497	0.891
We practice competitive intelligence in our business.	66.38	113.608	0.641	0.888
Our employees understand what competitive intelligence is.	66.68	113.547	0.582	0.889
Our managers support competitive intelligence practice.	66.43	114.969	0.618	0.889
Our business has a formalised competitive intelligence function.	67.17	108.160	0.727	0.884
We collect information about our competitors and analyse it.	66.76	110.384	0.674	0.886
We have a formalised competitive intelligence process.	67.38	109.011	0.687	0.885
We gather competitive intelligence for decision-making.	66.66	110.065	0.697	0.885
We know the prices of our competitors' products or services.	66.33	115.187	0.548	0.890
We know who our competitors' customers are.	66.66	116.117	0.358	0.895
We know our competitor's strengths and weaknesses.	66.68	115.251	0.503	0.891
We know who our competitors' suppliers are.	67.21	114.575	0.450	0.892
We hire people or other businesses to collect information on our behalf.	68.46	118.804	0.260	0.897
We have competitive intelligence professionals in our business.	67.91	112.050	0.473	0.892
We have a computerised competitive intelligence system.	67.85	111.717	0.472	0.892
Competition is too high in our business sector.	67.07	121.444	0.111	0.903
Competitive intelligence provides us with a competitive advantage over our rivals.	66.61	114.105	0.541	0.890
We practice competitive intelligence legally and ethically.	66.23	115.649	0.518	0.891
We process and store information collected for competitive intelligence.	67.07	109.529	0.627	0.887
We measure the impact of our competitive intelligence on profit.	67.48	111.360	0.562	0.889

Source: Author's calculations.

#### 4.3. Descriptive statistics: Competition, competitive advantage, competitive intelligence awareness, practice and formalisation

The mean value of competition information and competitive advantage is 3.792 and indicates that the majority of the property practitioners' firms collect competitors' information to gain competitive advantage. The standard deviation of 0.914 indicates

that there was less spread of responses. Thus, the majority of the respondents know their competitors' products and services prices, customers, strengths and weaknesses, and suppliers. Such intelligence may grant these firms a competitive edge over their competitors. Table 5 shows the descriptive statistics of competition information and competitive advantage factor and its items.

**Table 5.** Descriptive statistics of competition information and competitive advantage

<i>Item statistics</i>			
<i>Competition information and competitive advantage items</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>N</i>
We know the prices of our competitors' products or services.	4.16	0.796	239
We know who our competitors' customers are.	3.83	1.036	239
We know our competitor's strengths and weaknesses.	3.81	0.853	239
We know who our competitors' suppliers are.	3.28	0.997	239
Competitive intelligence provides us with a competitive advantage over our rivals.	3.88	0.890	239
Competition information and competitive advantage.	3.792	0.914	239

Source: Author's calculations.

Competitive intelligence awareness and practice factor has a standard deviation value of 0.895 indicating that there was less spread of responses. The mean value of 3.86 indicates that the majority of the property practitioner firms are aware of CI and practice it. The majority of the property practitioner firms practice CI legally

and ethically, process and store information collected for CI, gather CI for decision-making, collect information about competitors and analyse it, have formalised CI function, have managers who support CI practice, and have employees who understand CI. Table 6 shows the descriptive statistics of CI awareness and practice.

**Table 6.** Descriptive statistics of competitive intelligence awareness and practice

<i>Item statistics</i>			
<i>Competitive intelligence awareness and practice items</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>N</i>
We are aware of competitive intelligence.	4.21	0.756	239
We practice competitive intelligence in our business.	4.10	0.800	239
Our employees understand what competitive intelligence is.	3.81	0.876	239
Our managers support competitive intelligence practice.	4.06	0.731	239
Our business has a formalised competitive intelligence function.	3.32	1.053	239
We collect information about our competitors and analyse it.	3.73	0.977	239
We gather competitive intelligence for decision-making.	3.83	0.970	239
We practice competitive intelligence legally and ethically.	4.26	0.799	239
We process and store information collected for competitive intelligence.	3.42	1.100	239
Competitive intelligence awareness and practice.	3.86	0.895	239

Source: Author's calculations.

Competitive intelligence formalisation has a standard deviation value of 1.062 indicating that there was less spread of responses. The mean value of 3.07 indicates that the majority of the property practitioner's firms have formalised competitive intelligence. Thus, the majority of the property practitioner firms have formalised the CI function, collected information about competitors and analysed it, formalised the CI process, gathered CI

for decision-making, processed and stored information collected for CI, and measured the impact of CI on profit. However, the majority of the property practitioners' firms do not hire people or other businesses to collect information on their behalf, do not have CI professionals in their firms, and do have computerised CI systems. Table 7 shows the descriptive statistics of the CI formalisation factor and its items.

**Table 7.** Descriptive statistics of competitive intelligence formalization

<i>Item statistics</i>			
<i>Competitive intelligence formalization items</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>N</i>
Our business has a formalised competitive intelligence function.	3.32	1.053	239
We collect information about our competitors and analyse it.	3.73	0.977	239
We have a formalised competitive intelligence process.	3.10	1.050	239
We gather competitive intelligence for decision-making.	3.83	0.970	239
We hire people or other businesses to collect information on our behalf.	2.03	0.961	239
We have competitive intelligence professionals in our business.	2.58	1.174	239
We have a computerised competitive intelligence system.	2.64	1.204	239
We process and store information collected for competitive intelligence.	3.42	1.100	239
We measure the impact of our competitive intelligence on profit.	3.01	1.069	239
Competitive intelligence formalisation.	3.07	1.062	239

Source: Author's calculations.

#### 4.4. Application software used for competitive intelligence

Property practitioners' firms use application software for CI. The majority (69.27%) of the property practitioners firms use e-mail software for CI. More than half (57.07%) of the property practitioner's firms use spreadsheet software while almost half of the property practitioner firms use database software (48.78%) and search engines (46.34%). Other applications used for CI by property practitioners' firms are the following: Social network (41.95%); word processor (33.66%); and presentation (22.93%).

Property practitioners' firms use search engines to source information for CI. Almost all (98.06%) property practitioner firms use Google to source information for CI. Other search engines used by property practitioners' firms are the following: Yahoo (9.22%), Ask (6.31%), Bing (4.85%), MyWebSearch (4.85%), AOL Search (1.94%), Info (0.97%), Webcrawler (0.49%), and Dogpile (0.49%).

Property practitioners' firms use web browsers for CI. The majority (78.74%) of the property practitioners firms use Google Chrome to source information for CI. More than half (54.11%) of the property practitioners firms use Internet Explorer. Other web browsers used by property practitioners' firms are the following: Firefox (35.27%), Safari (8.21%), Opera (3.38%), and Netscape Navigator (0.48%).

Property practitioners' firms use social networks for CI. The majority (85.29%) of the property practitioners firms use Facebook to source information for CI. More than half of the property practitioners' firms use LinkedIn. Other social networks used by property practitioners' firms are the following: Twitter (34.80%), Google+ (25.98%), Pinterest (10.78%), Instagram (8.33%), Flickr (1.47%), Meetup (1.47%), Askfm (0.98%), ClassMates (0.98%), Meetme (0.49%), and Tumblr (0.49%). The majority of these property practitioner firms operate in the Gauteng province of South Africa. The province is furnished with high-quality infrastructure such as roads, electricity, telecommunication and airports. It hosts the capital city of South Africa, the largest airport in the country (OR Tambo) and the fastest and most luxurious train in the country (Gautrain). All these infrastructures allow businesses to operate with ease.

## 5. DISCUSSION

In support of the objectives of this study, the research also established the characteristics of the property practitioner firms. The findings indicate that the majority of property practitioner firms in South Africa are registered companies (PPRA, 2022). They have shared capital and can sell shares to the public. Selling shares allows companies to have more capital to invest in the growth and competitiveness of the company. A large number of property practitioner firms offer a variety of services as opposed to specialisation. They do rentals, sales, management and development. This is despite the fact that they have limited resources (PPRA, 2021). The findings of the study indicate that the majority of the property practitioners' firms are small with at most five employees and making at most R5m annual turnover. According to the World Bank (n.d.),

SMEs are an important contributor to the creation of jobs and economic development. SMEs represent 90% of businesses globally and contribute 50% of employment. Globally, SMEs contribute approximately 40% to their country's GDP (The World Bank, n.d.).

The findings indicate that the South African property practitioner firms are managed by owners. These findings are in support of existing literature that SMEs are managed by their owners (Nieman, 2006; Rajagopaul et al., 2020). The majority of the property practitioner firms have been operating for over six years. They are experienced and able to offer quality service to their customers. Thus, these property practitioner firms have gone beyond the survival stage as most SMEs fail within the first years of their existence. According to Faminu (2022), 80% of businesses in Africa fail within five years of their establishment.

This study aimed to establish awareness and practice of CI in the South African property sector. The findings of this research indicate that the majority of property practitioner firms are aware of CI and practice it. They practice CI to gain a competitive advantage and to aid in decision-making. The majority of the property practitioners' firms have been practising CI for over six years. These findings concur with existing literature which indicates that firms in the South African property sector practice CI (Nenzhelele, 2016). Moreover, it has been concluded that South African firms in general practice CI formally or informally (Maune, 2021).

The main objective of this study was to establish the formalisation of CI practice in the South African property sector. While it has been widely reported that most businesses practice CI informally (Uzoma & Hamilton, 2022), the findings of this study indicate that the majority of the property practitioners' firms have a formalised CI function and follow a formalised CI process. This is surprising considering that the majority of the property practitioner firms are small businesses. However, they do not have a computerised system for CI. They also do not appoint CI professionals. This may be understandable considering the fact that they have limited resources. The findings of this study are contrary to the recommendations that CI should be practised formally by CI professionals (Uzoma & Hamilton, 2022). Moreover, it is concluded that formal practice by professionals leads to quality CI (Rahma & Mekimah, 2023). Quality CI aids in quality decision-making (Dou & Fournie, 2021).

This search aimed to establish tools used by South African property practitioner firms to practice CI. The findings reveal that South African property practitioner firms use different application software in CI practice. This is in line with Maune's (2021) findings that firms have adopted different applications for CI practice. The findings indicate that the majority of the property practitioners' firms use e-mail, spreadsheets, databases, search engines and social networks. E-mail is the application software which is used most. Perhaps this is because most working people use e-mail for communication purposes. The majority of property practitioner firms use Google as a search engine for CI practice. It is no surprise considering the fact that Google is rated as the number one search engine in the world (Chris, 2024). According to Chris (2024), Google has a market share of 91.58%. The findings reveal that



most of the property practitioner's firms use Google Chrome as a web browser for CI. Google Chrome is rated the number one web browser in the world (Parrish & Haynes, 2023). Internet Explorer (its successor Microsoft Edge) is the second most used web browser for CI by property practitioners' firms. According to Parrish and Haynes (2023), Microsoft Edge (successor of Internet Explorer) is the best web browser for Windows.

The findings point out that property practitioner firms use social networks for CI practice. The findings concur with a study by Carvalho et al. (2022) which concluded that firms use social media for CI. Carvalho et al. (2022) further concluded that the use of social media increases the effectiveness of CI. This study found that the majority of property practitioner firms use Facebook in practising CI. The findings concur with that of Wu et al. (2023) who found that firms use Facebook for CI. This study also found that the second most used social network by property practitioners' firms is LinkedIn. According to Fawley (2013), firms use LinkedIn as a source of information for CI. Facebook and LinkedIn are rated number one and eighteen in the world, respectively, in terms of monthly active users and monthly organic users (Howarth, 2023).

## 6. CONCLUSION

The South African property practitioner firms practice CI to gain a competitive advantage over their rivals. Despite the majority of the property practitioner's firms being small with few employees and making at most R5m in annual turnover, they have been operating their businesses and practising CI for over six years. They are therefore experienced and able to provide quality real estate services to their customers. While it has been widely reported that most businesses practice CI informally, property practitioner firms in South Africa practice CI formally. They follow a formal CI process. However, they do not have a computerised CI system, nor do they appoint CI professionals. Property practitioners' firms use application software during CI practice. The most widely used are e-mail, spreadsheets, databases, search engines and social networks. Google is the most used search

engine by property practitioners' firms for CI. They use it to search for information for CI. They also use Google Chrome and Internet Explorer web browsers. Property practitioners' firms also use social networks to collect information for CI. The most widely used social networks are Facebook and LinkedIn respectively. It is clear therefore that property practitioners' firms in South Africa practice CI formally. They do so with the help of a formal CI process, application software, search engines, web browsers and social networks.

South African property practitioners' firms should continue to practice CI formally and follow a formalised CI process. Formal practice is a keystone of CI. They should utilise ICT optimally in the practice of CI and should therefore continue to use different application software and CI software. Practically, it is encouraged that firms in the South African property sector should invest in CI systems. Thus, they should have systems dedicated to CI. Moreover, property practitioner firms should appoint CI professionals as this ensures the production of quality CI. Policymakers should recommend the formalisation of CI practices using automated systems. Government laws and regulations should encourage the ethical and legal practice of formal systematic CI.

This research was limited to the South African property sector and cannot be generalised to other sectors of the economy. Moreover, the findings of this study cannot be generalised to other countries. There is a lack of literature on the South African property sector in relation to CI making it difficult to build a theoretical background to the study. The study was quantitative in nature and questions asked were closed-ended and did not yield rich data.

Future research should be conducted to establish why property practitioner firms do not appoint CI professionals. Research should be conducted to establish why property practitioner firms practice CI formally despite their small size. Future research should be conducted to establish application software features used for CI. Moreover, future research may follow a qualitative or mixed method.

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