Gordon Institute of Business Science
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The adoption of location intelligence in strategic decision-making within the retail industry

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

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Abstract

The upward trend of online shopping, together with rapid technological advancements and evolving consumer behaviour results in increasing decision-making complexity for retailers. Location, whether site selection for a new retail store or understanding target markets, is more complex now than ever before. Location intelligence has emerged as a technology that is fundamentally changing the retail game and offering early adopters a competitive edge. The purpose of the study was to undertake an analysis of the role that location intelligence plays in decision-making as a strategic enabler for South African retail growth.

Through an exploratory qualitative research design, making use of semi-structured interviews with 12 high-ranking executives, the research explored whether retail executives were aware of the term 'location intelligence' and to what extent they had been exposed to geographical or location-based tools and technologies for decision-making. Furthermore, the research explored retail executives' perceptions of the role of location intelligence for competitive advantage as well as to what extent location intelligence has been adopted for strategic decision-making.

Key findings from the thematic analysis showed that location intelligence is understood from an operational perspective and not core to the firms' retail model and strategy. The study also found that although executives believed that location is key to their organisation's success, they were unaware of the benefits of location intelligence for strategic decision-making. This research contributes to Retail Decision-Making Theory and the internal environment component of the retail location planning and decision-making model in that macro, meso and micro factors influencing retail location decision-making were understood. Furthermore, the study contributes to Location Theory from a strategic perspective. The outcome of this research also provides some insight into the extent to which location intelligence has been adopted within the South African retail sector. The research offers key recommendations for the adoption of location intelligence and mentions areas for future research.

Keywords:

Location Intelligence, Location Strategy, Retail Model, Retail Decision-Making

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Chapter 1: Problem Definition and Purpose

1.1. Introduction and Description of the Problem

Location intelligence is becoming a pertinent topic within businesses seeking competitive advantage. Strategic interaction and location choices of firms have, however, been largely overlooked in literature (Alcacer, Dezso, & Zhao, 2015). New forces in retailing innovation and consumer behaviour are influencing how shoppers choose services and products, select channels and make purchases. In order to remain competitive, retailers need to embrace new technologies for improved customer engagement. Continued research into these new technologies, such as location intelligence is worthy of exploration (Grewal, Roggeveen, & Nordfält, 2017).

The term “location intelligence” has become common language amongst business professionals and technical experts in the geospatial and geographical information systems (GIS) industries (Dangermond, 2019). Location intelligence refers to applications, tools, infrastructure and practices that are geared toward the analysis and sharing of spatial or location data and services for decision-making. The term has, however, not been well defined from a theoretical perspective and as such, a need has been identified to explore the theoretical roots thereof. This will be further explained in Chapter 2. Together with the understanding of the term, research of available tools and techniques that have a geospatial component for decision support is required (Kwakkel, Carley, Chase, & Cunningham, 2014).

An opportunity has emerged to research the application of Location Intelligence for the South African retail industry from a strategic and decision-making perspective and would be a valuable addition to academic literature. Reynolds and Wood (2010) note in their research on location decision-making in retail firms that GIS has considerable benefits for retail managers when integrated with decision support systems. Their research into the academic literature on location analysis and retail reveals that despite many organisations utilising geographic customer and market databases for store location analysis, the integration of these databases into strategic decision-making was lacking (Reynolds & Wood, 2010). The location of retail stores offers retailers an important strategic advantage. The selection of these locations is a critical strategic decision which inevitably effects the long-term sustainability and profitability of the retailer as a substantial investment is required

when developing and resourcing a retail store. Location is essentially the most important factor affecting retail success (Yildiz & Tüysüz, 2018).

Most research into the topic of Location Intelligence has been conducted internationally with very little reference to South African organisations. Carto, a leader in spatial technologies and location intelligence, recently published a report titled, “The State of Location Intelligence, 2018” (Carto, 2018), which includes a survey of over 200 business executives and analyses how critical they perceive Location Intelligence with respect to the success of their organisations as well as the challenges in its adoption. Findings from their survey show that nearly all large and medium organisations collect and store location data and that business executives are aware of the value of location intelligence for the success of their business (Carto, 2018). It must be noted, however, that organisations surveyed, operate in developed regions and executives may differ in their opinions to their African counterparts. As a means to bridge this gap, South African retail executives’ perceptions of location intelligence and adoption thereof for strategic decision-making, will be researched.

A new retailer can differentiate itself from first-mover competitors through implementing unique location strategies which differentiate on brand concept (Lee & Kim, 2018). Some retailers are purchasing mobile phone location data on where people eat, sleep and move to gain insights into their preferences so that they can decide on what to advertise and where to open which kind of store (Katz, 2019). Other retailers perceive location decisions as both an art (intuition or gut feel) and a science (analytical GIS approach) (Hernandez & Bennison, 2000). Decisions can be made using either intuition and instinct or rational thinking. Good data won’t guarantee good decisions, and one must, therefore, trust both data (rational thinking) and your gut (intuition) in making decisions. Companies essentially need more informed sceptics who critique the information and not only trust it blindly in this process of decision-making (Shah, Horne, & Capellá, 2012).

Internationally, location Intelligence is levelling the playing field between large established retailers and start-ups with executives leveraging both accurate location data and retail experience for decision-making. Is this the case in South Africa? This research will aim to address this question by exploring this gap between literature and retail executives’ perceptions and mindsets about the adoption of location intelligence for strategic decision-making.

1.2. Purpose of the research

The purpose of this research is to undertake an analysis of the role that Location Intelligence plays in decision-making as a strategic enabler for South African retail growth. The research will endeavour to understand executives' perceptions of the role of location intelligence in decision-making. The motivation behind this research flows from the researcher's interest in retail as well as the application of location strategy in business. Location strategy that is well-designed and formulated is a key factor for success in retailing (Lee & Kim, 2018). The research will seek to understand to what extent South African executives have implemented a location strategy in their organisations as well as explore location factors that have contributed to retailing success.

The research will also seek to understand the concept of Location Intelligence and its application to decision-making as well as gain insights into how South African executives perceive its value and benefits for business strategy. The rationale for conducting research into the adoption of location intelligence in strategic decision-making within the retail industry is to gauge if business leaders in South Africa understand the concept of Location Intelligence and if they, like their international peers, understand its value for strategic decision-making.

Three aspects that this research will focus on are; what literature reveals about location intelligence and its relevance to decision-making; whether South African retail business decision-makers are aware of the benefits of location intelligence and if they perceive location intelligence to be valuable for their organisational strategy.

1.3. Business Rationale

Due to the advancement in technology within the retail industry, many firms are facing challenging decisions to gain strategic advantage over competitors. Location Intelligence is proving to be a key differentiator for firms to gain more insights into consumer behaviour and understanding the geographic landscape of competition. A recent market study by Dresner Advisory has found that "66% of enterprises surveyed rank Location Intelligence as either critical or very important to revenue growth strategies and that R&D, Sales, and Marketing place the highest importance on Location Intelligence in 2018" (Columbus, 2019).

Because of the increasing pressure from customers for faster delivery of products, e-commerce firms such as Uber Eats are increasingly relying on real-time location analysis (Herschel et al., 2018). The uptake in online retail in South Africa has exceeded 2018 market expectations according to the World Wide Worx report on Online Retail in South Africa 2019 (Goldstuck, 2018). The e-commerce sector is poised for continued growth which will undoubtedly impact the future South African retail landscape. Even though there is an uptake in e-commerce, geography still matters. “e-Commerce, even under the most radical scenarios, will not make geography irrelevant” (Anderson, Chatterjee, & Lakshmanan, 2003, p.1). The difference between traditional brick and mortar stores versus e-retail is that the prior need to attract customers to the store whereas the latter needs to deliver their products to the customers’ location. In both cases, geography plays a critical role in decision-making. A recent article from Esri Inc. (global leader in GIS software) entitled, “The Secret Formula Behind One of the World’s Biggest Business Expansions” points to the role of Location Intelligence as the key technology behind the X5 Retail Groups business expansion success (Sankary, 2018). Retail brands that will win in the future, are those who leverage location data to gain deep customer insights and craft business strategy accordingly (Columbus, 2019).

Jack Dangermond, Founder and President of Esri (market leaders in Geographic Information Systems software), recently mentioned in an article in *Fortune* Magazine that executives are realising that they are able to save money and improve decision-making by thinking geographically as well as having a location strategy (Clancy, 2014). Because of the rapid adoption of smartphones and Internet of Things (IoT) devises that generate location data, it has been predicted by Gartner Research that “by 2022, 30% of customer interactions will be influenced by real-time location analysis, up from 4% in 2017” (Herschel et al., 2018, p.1). Firms are beginning to use more real-time location analytics due to the greater customer demand for improved experience. The uptake of geospatial and location intelligence capabilities within organisations is low, however. Only about 29% of firms use Location Intelligence and of those, only about 4% perform real-time analytics on the location data (Herschel et al., 2018). According to the Grand View Research Location Intelligence market report, the Location Intelligence industry is poised to grow from $8.12bn in 2016 to a staggering $25.25bn in 2025 (Grand View Research, 2018) which attests to the benefits that businesses are gaining through its implementation. Similarly, the GeoBiz 2018 market report states that “Globally, the geospatial industry

market is witnessing unprecedented growth in all geographies with high double-digit growth in the Asia Pacific, Middle East, Africa and South African regions, riding on demand from emerging market geographies. However, the overall engine of geospatial industry growth as well as its readiness to meet current and future leadership remains with North America" (Countries Geospatial Readiness Index 2018, p.4). South Africa ranks 30th in terms of geospatial readiness with low user adoption scores (Geospatial Media and Communications, 2018). This low rate of adoption will be explored in the research.

Thanks to Google Maps, most people have become aware of, and dependent on, mapping apps to navigate through traffic and find the fastest and least congested route to their destination. The benefits of geographic technology or Geographic Information Systems (GIS) reaches far beyond navigation. Thousands of organisations rely on GIS for mapping and decision-making. The technology has undergone rapid evolution over the past decade enabling real-time decision-making through the collection and harnessing of data from people (location-based information from mobile phones and wearables), sensors, satellites, drones, vehicles and aircraft, to name a few.

A recent article was written by the Dean of the University of Redlands Business School entitled "The next MBA you hire should know GIS", notes that the benefits of spatial business intelligence or location intelligence are becoming ever more important as technologies such as the Internet of Things (IoT) and big data analytics transforms businesses. He adds that location intelligence enables executives with advanced decision-making skills to improve business results (Horan, 2018).

Location intelligence is proving valuable for decision-making and undergoing considerable growth internationally. Are South African executives equipped to leverage location intelligence and are they aware of these global trends? Are they adopting location intelligence as a decision-making tool for strategic advantage? It is anticipated that senior executives and key decision-makers may not be fully aware of the benefits of location intelligence for strategic advantage. Do South African retail executives perceive the adoption of location intelligence to be as relevant and beneficial for strategic decision-making in the local retail landscape as it is for retail brands in developed markets? Sub-questions that aim to address this overarching question include:

1. What is the nature of location intelligence and the application thereof in South African retail decision-making?
2. How do business executives in the retail sector perceive the role of location intelligence for competitive advantage?
3. How are executives influencing the adoption of location intelligence technology as a tool for strategic business decision-making?

Chapter 2: Literature Review

2.1 Introduction

In business environments that are becoming ever more competitive, technology is emerging as an enabler for firms to differentiate. As one of the largest and most diversified operations in the world, retailers are concerned with strategies such as location choice, store formats, product selection and pricing (Kumar, Anand, & Song, 2017). Location intelligence is one technology that is influencing location choice and decision-making in retail firms.

This research aimed to look at the literature underlying perceptions of location intelligence and strategic decision-making that firms can leverage for differentiation. Pressures for retailers to adapt to the increasingly competitive environment and employ more locational decision-making tools has grown (Hernandez & Bennison, 2000). Decision-making in these environments requires that business and customer data must be available near real-time and that executives are provided with accurate and easy to understand reports and interactive dashboards. International, and in some cases locally, retail executives are relying on Location Intelligence to make informed decisions concerning their strategy and competitive landscapes. “Location as a factor enables companies to succeed in local and global markets” (Ramadani, Zendeli, Gerguri-Rashiti, & Dana, p.99).

Studies and research on optimal brick and mortar store locations, as well as retail and supply chain efficiency, have been extensively undertaken. Similarly, various studies have also been undertaken on e-retailing business in South Africa, although most focus on the adoption of e-retail technology (Okanga & Groenewald, 2015). A key aspect of customer insights is knowing where customers are located and how they interact with your brand.

Location intelligence enables organisations to understand their customers, target market and competitive landscape in a geographical context. These insights may enable organisations to gain a competitive advantage only if the Location Intelligence methodologies are embedded in the organisation’s decision-making strategies.

The below sections unpack the theory behind Location intelligence from a geographical, technological and decision-making perspective and how these methodologies inform location strategy. A top-down approach has been followed whereby Location intelligence is applied to decision-making to inform strategic options for firms to consider.

2.2 Location Strategy

“The location strategy gives spatial expression to the firm’s corporate goals” (Hernandez, Bennison, & Cornelius, 1998, p. 303). Executives are continuously confronted with having to select which strategic approach is most appropriate for their organisation. Organisational lifecycle, market segment and competitive landscape are just a few factors that executives need to consider when deciding on which strategic approach to follow. Location strategy is concerned with the planning and decision-making regarding broad issues such as the size of retail outlets, type of site and product mix for the specific market or potential customers that the firm aims to target (Hernandez et al., 1998). Reeves, Haanaes, and Sinha (2015) developed a strategy palette that provides executives with a new language to compare when, how and where to use different approaches to strategy. This pallet offers a guide for both strategic and operational considerations across all five business environments, namely: classical (be big), adaptive (be fast), visionary (be first), shaping (be the orchestrator) and renewal (be viable) (Reeves et al., 2015). The adaptive approach (difficult to predict and continuous change) is most applicable to the retail industry and the key trap that executives need to consider is planning the unplannable (Reeves et al., 2015). Retail executives are having to deal with rapid technological changes. Recent examples include Uber Eats and Takealot which are eroding retail organisation’s profit margins due to e-commerce and associated logistics fees. These technology disruptors have leveraged the power of location to offer services that traditional brick and mortar businesses are unable to rival (unless they adapt). Location considerations are key to strategy formulation and execution in the retail sector.

Location has become a key differentiator for firms. “As countries develop, location matters less for families and more for firms” (World Bank, 2009, p.2). Well-designed location strategy formulation is a key component for retailing success (Lee & Kim, 2018).

Location strategy formed a key part of Howard Shultz's Starbucks expansion strategy. Location-centric site selection criteria included areas of high visibility, easy access, population density, and state of local competition (Koehn, 2005). Recent literature, however, shows that geographical location of retail stores and customer's distance to those stores has become less important. This is due to technological change, consumer behavioural changes and ability of retailers to deliver services faster from online platforms (Kumar et al., 2017).

Various maps and geographical visualisations are available which communicate a wealth of knowledge in various ways. Although aesthetically pleasing, these visualisations are less clear on how they can be utilised to inform decision-making (Kwakkel et al., 2014). Knowing the spatial distribution of customers and linkages with suppliers, buyers and other industries are important for efficiency and economic growth as well as innovation (Porter M.C., 2000). Location intelligence is key to understanding these spatial linkages. Geographers have contributed a great deal to retail location strategy as they have highlighted the strategic dimensions of retail locations as well as researched location strategies from the perspective of the retailers' footprint (Lee & Kim, 2018). In the search to understand the roots for location intelligence from a geographical perspective, literature points to New Economic Geography Theory and Location Theory which provides the most comprehensive foundation.

2.3 New Economic Geography Theory

New Economic Geography Theory provides the context and framework to apply when dealing with location challenges facing business (Krugman, 1998). New Economic Geography Theory has introduced modelling from a strategic perspective. The theory claims that two forces (centripetal and centrifugal) are at play in markets which create forward (large markets) and backward (preferred locations) linkages. Essentially, this means that markets are created as a demand for a product or service emerges based on customer needs or locations. Due to continuous change in global and local economies, these forces are continuously in a state of tug-of-war which both promotes and oppose geographical concentration of economic activity (Krugman, 1998). It is, however, important to shed light onto the beginnings of New Economic Geography theory. With its roots in Location Theory, which dates back to 1800s, New Economic Geography theory suggests that competition among firms is

due to the agglomeration effect (firms drawn together spatially due to centripetal forces) (Krugman, 1998). Von Thünen's Location Theory addressed the where and why of economic activity locations. Harris, also developed a market potential theory which postulates that firms tend to locate in areas where they have the most optimal access to markets for selling their product (Krugman, 1998).

The unique spatial distribution of South African towns and cities play a role for decision-makers who require an understanding of their target markets for strategic business growth. It is also important for business owners to keep abreast with trends in location attractiveness. Proximity (localisation or urbanisation economies) offers benefits to firms who by grouping together, can leverage economies of scale for increased return on investment (Krugman, 1998). New Economic Geography Theory and Location Theory (discussed in section 2.4) offer a theoretical baseline for decision-makers to ask important "where" questions that impact business performance and inform strategic decision-making.

2.4 Location Theory

As noted in the previous section on New Economic Geography, Location Theory essentially is the heart of economic geography and is concerned with the question of where economic activity can be found (Gorter & Nijkamp, 2001). According to the grandfather of economics, Adam Smith, this relates to the interconnectedness between the impacts of trade on location decisions and location impacts on trade flows (Gorter & Nijkamp, 2001). The key question in location theory is "which are the motives to choose a particular location and which are the geographic implications?" (Gorter & Nijkamp, 2001, p. 9014). Location theory is also concerned with both the micro and macro aspects of decision-making which has evolved from the central place theory developed by Christaller in 1933 that advocated the idea of economic activity being subject to agglomeration advantages. These advantages have centralised economic activity thus creating clusters (Gorter & Nijkamp, 2001).

The evolution of technology and consumer behaviour has thus led to many economists advocating the 'death of distance' wherein location plays less of a central role in decision-making. Despite these changes, location theory is still positioned as a global force field, but much work is required to investigate the advantages and disadvantages of this evolutionary change (Gorter & Nijkamp, 2001).

2.5 Business Intelligence as Foundation of Location Intelligence

Business intelligence is both a process (methods used by firms to develop meaningful information or intelligence) as well as a product (information that will allow firms to predict the behaviour of markets, customers, competitors and general business environment) which firms leverage for competitive advantage (Jourdan, Rainer, & Marshall, 2008). “Business intelligence has evolved because the amount of data generated through the internet and smart devices has grown exponentially altering how organizations and individuals use information” (Larson & Chang, 2016, p. 700). The big data can essentially be utilised by retailers to draw insights and make predictions about consumer behaviour to craft products that are more appealing and encourage purchasing decisions. With the increase of location-based application usage (e.g. Google maps), consumers expose locational information which retailers can leverage to offer products based on geographic insights such as warm coffee on a cold day or promotion of a product based on a consumers location in a mall (Grewal et al., 2017). Location intelligence is becoming a key part of business intelligence as it is allowing firms to geo-target customers through analysing spatial patterns and optimise products, pricing and marketing campaigns for those customers (Said & Torra, 2019). Research findings from the analysis of business intelligence literature have, however, found an absence in coordinated theory development (Jourdan et al., 2008).

Location intelligence is a branch of business intelligence. Business intelligence has been defined in similar ways by various scholars over the past decade (Larson & Chang, 2016). The most recent definition of business intelligence is that of Gartner which states that business intelligence is an umbrella term which includes applications, tools, infrastructure, and practices to enable access and analysis of information to optimize performance and decision-making (Gartner, 2019). Forrester Research defines business intelligence as “a set of methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information. It allows business users to make informed business decisions with real-time data that can put a company ahead of its competitors” (Evelson, 2008, p.1). Location intelligence compliments business intelligence (Forbes, 2015) and due to the lack of an academic definition, can thus be defined similar to business intelligence except that all applications, tools, infrastructure and practices are geared toward the analysis and sharing of spatial or location data and services for decision-making.

2.6 Retail decision-making and Location Intelligence

“Decision-making is the most significant activity engaged in by managers in all types of organisations at any level” (Harrison, 1996, p. 46). A wide array of analytical techniques are available to retailers to support locational decision-making (Hernández & Bennison, 2000). Location decisions of firms form part of a broader set of decisions such as marketing channels, technology, branding and market areas (Gorter & Nijkamp, 2001). Due to the nature of retail, executives are continually challenged with having to make choices about how best to serve their customers’ needs and what products are best suited for which markets. Whether in brick and mortar, e-commerce or omnichannel retail, understating markets and the location of customers is key. Most of the studies previously conducted on retail location focused on low-level tactical decisions rather than high-level corporate strategy (Lee & Kim, 2018). The trend of location analysis and intelligence methods to be combined with decision-making concepts and principles is becoming more relevant for business (Pick, Turetken, Deokar, & Sarkar, 2017). This is largely being driven by the accelerated rate of retail evolution due to technological change and evolving customer behaviour (Grewal et al., 2017). As customer behaviour changes with the adoption of mobile technology and online ordering, retailers should rethink their targeting strategies based on customer locations (Kumar et al., 2017). Knowing the spatial location of a customer offers retailers the ability to be more effective with marketing campaigns (Bradlow, Gangwar, Kopalle, & Voleti, 2017). This approach differs to the traditional approach by brick and mortar models whereby location analytics is focused on attracting a customer to a specific store.

Reynolds and Wood (2010), researched the extent to which geographical knowledge can be catered for within the decision-making process of corporate information systems. Their findings revealed that although there is a positive trend in firms utilising geographical methods for decision-making, the methods are in many cases restricted to technical and operational planning teams with minimal awareness on an executive level (Reynolds & Wood, 2010). Research by Hernández and Bennison (2000) has also revealed that retail location decision-making is both an art and a science. Their research shows that the vast majority of retail decision-makers continue to rely on personal experience and gut feel when making location decisions, but that trend toward the adoption of more formalised approaches to location decision-making is increasing (Hernández & Bennison, 2000).

The location planning and decision model (Figure 1) developed by Hernández and Bennison (2000) offers a framework whereby GIS and decision-making activities may be linked. The model's four components, namely the external environment, the internal environment, locational management, and the property portfolio are inter-related and location plays a role in decision-making throughout (Hernández & Bennison, 2000). This model has served as the foundation for other studies of this nature such as that of Reynolds and Wood (2010) which compared their survey results to that of Hernández and Bennison (2000) to assess the evolution and challenges of location decision-making in retail firms. Due to the significance of Hernández and Bennison's (2000) retail location planning and decision-making model, the researcher has thus chosen this model as the basis to assess results and findings.

The location management and property portfolio streams of the model are sub-divided into three decision-making levels, namely strategic, monadic (individual store outlet representation), and tactical. The model shows a direct relationship between all three levels from strategic to tactical and vice-versa (Hernández & Bennison, 2000). The model also shows internal and external factors that influence the variation of usage of GIS. The external environment relates to the environment in which a store operates. Superstore formats, for instance, have the most complex and embedded locational techniques (Hernández & Bennison, 2000). This can be attributed to corporate structure and formalised processes. Decision-making within smaller retailers tends to reside with senior management who have many years of experience. This factor has affected the adoption of GIS as the culture of the internal environment is more knowledge-based and unreceptive to change, rather than innovation-focused which use data and GIS to support decision-making (Hernández & Bennison, 2000). Both the research of Hernández & Bennison (2000) as well as Reynolds and Wood (2010) show that most location planners within retail organisations have in most cases, access to rich datasets for strategic decision-making, yet these planners and advisors are not well recognised for their legitimacy within the greater organisation and senior management (Reynolds & Wood, 2010). The usage of tools and techniques available to retailers for decision support also remains low (Hernández & Bennison, 2000). This may be attributed to the internal environment and culture which will be explored in the research.

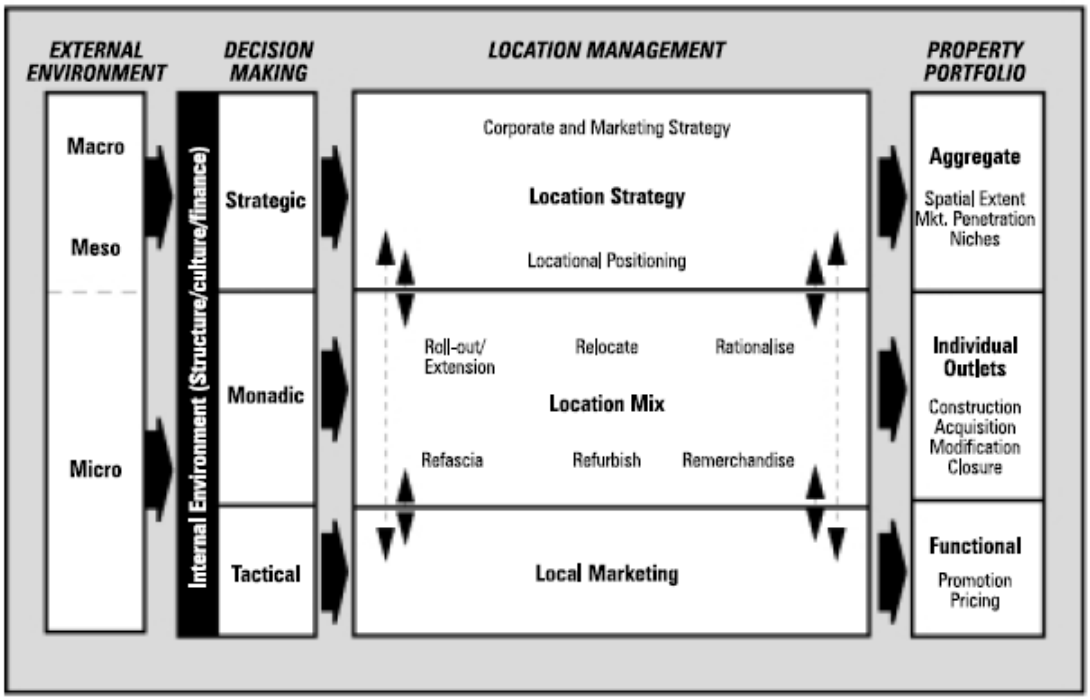

Figure 1: Retail location planning and decision model (Hernández & Bennison, 2000, p.359)

This study will aimed to understand the adoption of location intelligence on a strategic level as well as internal and external forces influencing the adoption. Internal forces, such as decision-making culture and business structure will be explored. External forces (Macro, Meso and Micro) affecting internal decision-making were explored. According to Hernández, Bennison and Cornelius (1998), Macroenvironmental factors are societal such as the political, socio-cultural, legal, economic and technological factors that affect the business environment in which the firm operates. Meso factors refer to the strategic goals articulated by the firm in order to navigate the more constrained and perceived environmental domain in which they operate. The Micro factors are task-orientated whereby the firm implements the strategy on outlet level decisions (monadic and tactical). There exists interconnectivity between the micro and macroenvironments due to the effect of the macroenvironment on the local economy such as land use planning guidelines enforced by national government (Hernandez et al., 1998). The following section will expand on strategic decision-making and business model choices for competitive advantage.

2.7 Strategic Decision-making and Competitive Advantage in Retail

Technological change is fundamentally changing firm competitiveness and in order to sustain competitive advantage, firms have had to learn to adapt and change their business models (Casadesus-Masanell & Ricart, 2010). This change is evident in retail and one such technology which is enabling competitive advantage is location intelligence. According to Kumar et al. (2017), the geographical location of a specific retail store will be less important than the strategies employed to target customers based on their location to attract them to the specific store (Kumar et al., 2017).

Are location factors affecting retail business models? According to Casadesus-Masanell and Ricart (2010), business models comprise of management choices regarding how the firm must operate and create value for its shareholders, as well as the consequences of these choices which includes the location of facilities. Strategy deals with the business model choice that the firm will compete in whilst tactics are the consequent choices available which are dependent on the chosen business model (Casadesus-Masanell & Ricart, 2010). Therefore, the business model chosen by management is directly related to the tactics available to the firm, enabling it to compete in the market. A retail example could be competition between a 'mom-and-pop' store and a discount retailer which both compete on tactical pricing to win customers. Strategy is, however, concerned with the particular choices regarding the way a firm competes. Choosing a certain business model will have implications for competitive outcomes (Casadesus-Masanell & Ricart, 2010). Keeping the model feasible is however likely to be an ongoing task (Teece, 2010).

According to Harrison (1996), decision-making is "an ongoing process of evaluating alternatives for meeting an objective, at which expectations about a particular course of action impel a decision-maker to select that course of action most likely to result in attaining the objective" (Harrison, 1996, p. 46). Strategic decisions, however, deal with the long-term success of the organisation and encompass numerous complex dynamic variables (Harrison, 1996). According to Shivakumar (2014), commitment to careful planning, analysis and implementation will result in effective strategic decision-making (Shivakumar, 2014). Shivakumar (2014) developed a framework (Figure 2) to categorise whether decisions are of strategic nature or whether they are merely operational, tactical or non-strategic. Strategic decisions require a significant level of commitment as they alter the scope of the organisation. They are also

complex in nature and require a more systematic approach to problem-solving (Shivakumar, 2014). Strategic decisions influence tactical decisions which are often motivated by “hard” problems such as changes in consumer preferences and decisions by competitors (Shivakumar, 2014). Casadesus-Masanell and Ricart (2010) suggest that there needs to be integration between strategy, business models selected, and the tactics employed to reach a certain long-term goal.

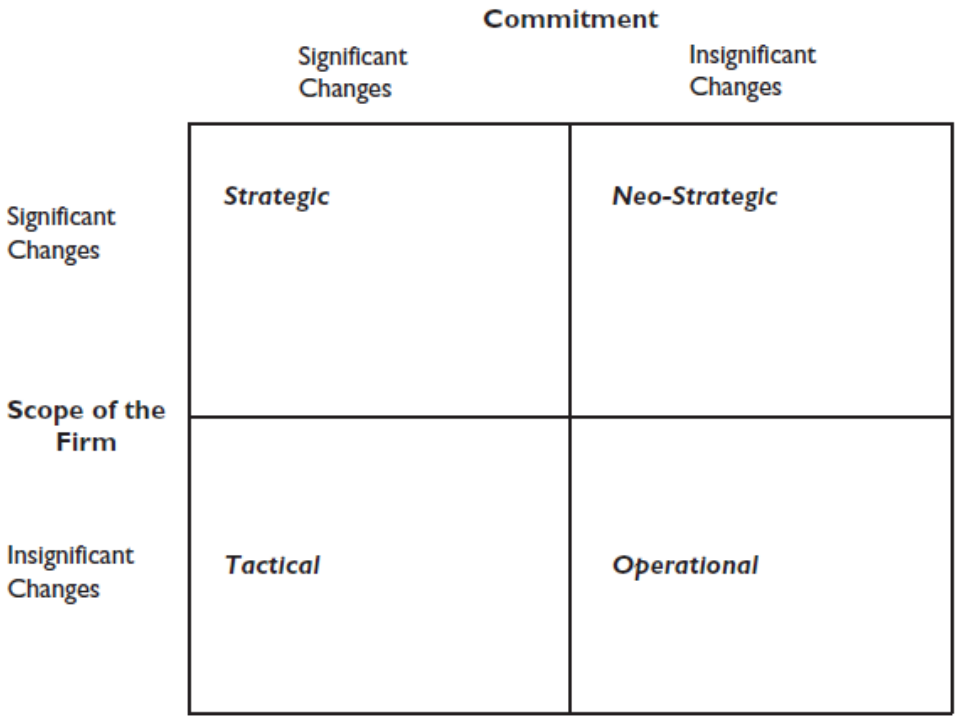

Figure 2: Strategic Decisions (Shivakumar, 2014, p.87)

Designing business models to reach these goals are thus a reflection on the strategy and subsequent tactics. Tactical choices are relatively easy to change compared to strategic choices made in formulating the business model which are not easily reversible (Casadesus-Masanell & Ricart, 2010). When formulating a business model and strategic objectives, retail firms need to make substantial store location investments which are not easily reversible and can be considered critical for long-term success.

Due to seismic shifts in retailing, escalating customer expectations, and heightened competition, retailers are needing to be more innovative in their approach to business models (Sorescu, Frambach, Singh, Rangaswamy, & Bridges, 2011). “A retail business model articulates how a retailer creates value for its customers and

appropriates value from the markets" (Sorescu et al., 2011, p. 3). Because of factors such as consumer's need for convenience, a new retail business format is a kiosk which is located in areas that are easily accessible and convenient for customers. Some retailers are also radically reducing store sizes in areas where there is high foot traffic while adapting their product range in these locations to the target market. This helps retailers achieve a higher level of customer efficiency by enabling easy access to products by offering a product in multiple locations (Sorescu et al., 2011).

Where retail business models are primarily based on the location of their stores on the basis of competition with rivals, store location strategies are of particular importance. These strategies are concerned with store location in relation to customer demographics as an understanding of the local demographic landscape assists retailers in distinguishing themselves against their competition by utilising tactics such as store-level pricing and store formats (Kumar et al., 2017).

2.8 Conclusion

A review of the literature shows that location intelligence has touchpoints in many layers of decision-making and strategy, from a practice perspective, but to a lesser extent from a theoretical perspective.

As customers locations dynamically move and technologies become more advanced, applying the "where" factor to business becomes ever more important for decision-making and strategy. Location factors together integrating channels and big data analytics has now become a prerequisite of competitiveness (Grewal et al., 2017). The question is whether executives are aware of these trends and are they adopting location intelligence as a strategic decision-making tool, remains to be explored.

This study, therefore, aimed to understand whether South African retail business decision-makers are aware of the benefits of location intelligence and if they perceive location intelligence to be valuable for their organisational strategy. This was explored within the context of what literature has revealed about location intelligence and its relevance to decision-making.

The strategic level of the retail location planning and decision model (Hernández & Bennison, 2000) was also mapped against perceptions of retail executives of the value of location intelligence for understanding its influence on retail business model choices as well as related internal and external factors driving strategic decision-making.

Chapter 3: Research Questions

Research Question 1: What is the nature of location intelligence and application thereof in South African retail decision-making?

Despite the increasing trend of organisations utilising geographic data analysis and intelligence for store location planning, the literature reveals that there remains a lack of application on a strategic decision-making level (Reynolds & Wood, 2010).

Research Question 1 aims to understand whether retail executives are aware of the term location intelligence and to what extent they have been exposed to geographical or location-based tools, technologies or support systems for decision-making. The question also aims to explore the extent to which location intelligence is applied within retail organisations.

Research Question 2: How do business executives in the retail sector perceive the role of location intelligence for competitive advantage?

In order to remain competitive, location data analytics and retail channel integration have become a prerequisite (Grewal et al., 2017). According to Casadesus-Masanell and Ricart (2010), business model selection will have implications on competitive outcomes of a firm.

Question 2 aims to understand the processes and techniques that decision-makers have used in the past to make location decisions as well as gain insight into decision-maker's mindsets and perceptions about the role of location intelligence for competitive advantage. In addition to this, the question also aims to gain an understanding of the factors that influence location decision-making in retail business models from both an internal environment and external environment perspective.

Research Question 3: How are executives influencing the adoption of location intelligence technology as a tool for strategic business decision-making?

As strategic decisions are complex in nature and require a systematic problem-solving approach, these decisions require a significant level of commitment (Shivakumar, 2014). Due to the diverse nature of retail operations, strategies concerning location choice are important to retailers (Kumar et al., 2017).

This question will help in understanding the retail business environment and how executives are adapting to the evolving complexity within the sector and whether they are purposefully advocating for the adoption of location intelligence to aid decision-making. This question will also assist with understanding the relationship between operational and tactical environments within retail organisations and whether location intelligence is being adopted as an internal capability or outsourced to external consultants for strategic advice.

Chapter 4: Research Methodology and Design

4.1 Introduction

This section discusses the research methodology used for this study.

It is anticipated that senior executives and key decision-makers may not be fully aware of the benefits of location intelligence for strategic advantage. The research required that an interpretivism paradigm be adopted as it is the best-suited option to understand how South African retail executives perceive the value of location intelligence and benefits it holds for business strategy. Do South African retail executives perceive the adoption of location intelligence to be as relevant and beneficial for strategic decision-making in the local retail landscape as it is for retail brands in developed markets? Sub-questions (described in Chapter 3) that aim to address this overarching question include:

1. What is the nature of location intelligence and the application thereof in South African retail decision-making?
2. How do business executives in the retail sector perceive the role of location intelligence for competitive advantage?
3. How are executives influencing the adoption of location intelligence technology as a tool for strategic business decision-making?

Additionally, the internet and connectivity are rapidly changing the way we work and interact forming certain social behaviours in trade and consumption which affects business decision-making. To address the research questions, it was necessary to understand the perceptions of executives regarding the role that location intelligence plays in strategic decision-making in retail.

4.2 Rationale for the chosen method of research

A qualitative research methodology was selected as the research aimed to understand the mindsets and perspectives of decision-makers within the South African retail sector. Location intelligence has attracted attention from scholars in developed countries where the adoption of technology has been faster. After reviewing available literature on the subject, it had become evident that little research on the topic had been conducted locally and as a result, there is a lack of data.

Zikmund, Babin, Carr & Griffin (2013) describe qualitative research as “research that addresses business objectives through techniques that allow the researcher to provide elaborate interpretations of market phenomena without depending on numerical measurement. Its focus is on discovering true inner meanings and new insights” (p.113). A benefit of qualitative research is that this methodology will enable a fresh view on understanding the adoption of location intelligence in decision-making within the retail industry, and subsequently add value as a base for further research to be undertaken, in the future. The research approach was inductive, and data collected through interviews was tested against theory.

The research targeted several South African based retail organisations as a way to understand the adoption of location intelligence as a tool for strategic decision-making within the local retail industry. A heterogeneous group of retail organisations was selected for the sample to present a balanced view of the industry. A structured questionnaire was designed as this method is bounded in time and place and popular in business research (Saunders & Lewis, 2012). Due to the nature of the study, the proposed choice of methodology was mono method and qualitative through purposive sampling and structured interviews. (Saunders & Lewis, 2012). The research is focused on understanding the adoption of location intelligence for decision-making in retail. An exploratory research approach was necessary as phenomena, which were not yet fully understood, were analysed (Saunders & Lewis, 2012). Exploratory research is conducted to clarify ambiguous situations or discover potential business opportunities” (Zikmund et al., 2013, p.54). The research design considered the aim to understand executives’ perceptions into retail decision-making through understanding the relevance of location intelligence within the process.

The approach was to collect primary data by means of structured interviews, which for the purpose of the qualitative research, was exploratory in nature (Saunders & Lewis, 2012). The structured interviews as a research instrument ensured that the same questions covering several topics were posed to all interviewees.

The topics ranged from understanding what location intelligence entails; to adoption of location intelligence as well as the application thereof at an organisational level. Consistency of Interview transcripts was important for analysis of the text data. The interviews and questions were structured in such a way as to gain insights into executives’ understanding of location intelligence in the broader global perspective

as well as how the technology and approach is or can be applied to strategic decision-making within their respective organisations.

Due to limited timelines to gather and analyse primary data, cross-sectional research was the best-suited approach. The cross-sectional research was undertaken whereby data collected represented a specific time as well as an understanding of the mindsets of executives regarding the application of location intelligence for decision-making (Saunders & Lewis, 2012).

4.3 Population

The population comprised of retail business executive decision-makers who distribute their products through traditional brick and mortar stores as well as those who have adopted e-retailing and/or omnichannel market strategies in retail in South Africa. The population sample also comprised of executives from established retail brands within these channels. Due to time and budget limitations, businesses with strategic headquarters based in the Gauteng province were targeted for research purposes.

4.4 Unit of analysis

The unit of analysis was the perceptions of executives that formed part of senior management and who had strategic decision-making power within the organisation. These roles included Chief Executives, Managing Directors, Founders, e-Commerce, Operations and Finance Executives as well as General Managers. It was presumed that these individuals had knowledge and insights into their organisation's target market, geographical footprint, customer base and growth strategy. Table 1 shows the number of interviewees by position and level of seniority.

4.5 Sampling method and size

Non-probability sampling and purposive (selecting respondents for a reason) were undertaken (Saunders & Lewis, 2012). Executives were selected from established South African retail brands. The organisations varied in size and target market which enabled the research to gain more in-depth, rich and diverse perspectives regarding the adoption of location intelligence for testing against existing literature.

Table 1: Position of Chosen Sample

Level of seniority	**Number of respondents**
Founder	2
Managing Director	2
General Manager	2
Chief Executive	1
Operations Executive	3
Finance Executive	1
e-Commerce Executive	1

Parameters such as the size of organisation, geographical store footprint and product offering were considered when selecting respondents. Organisations with more than five outlets were included as these typically represent franchised brands that have an established customer base unlike, mom and pop stores which are very location specific and independent. Respondents from organisations who serve customers or distribute their products throughout South Africa were included as geography plays a role in their distribution channels. Executives from various types of retail channels were considered. These channels included speciality stores, fashion retailers, supermarket brands, discount stores, e-commerce retailers as well as the restaurant and fast food retail brands. A subgroup of 12 executives from the retail channels was identified as this allowed for various perspectives to be tested across different organisational levels. Six executives from organisations that trade food and restaurant retail were identified as well as six from consumer goods and services. These decision-makers all held senior management level positions within their respective retail organisations and were all knowledgeable about their organisation's business strategy and the extent to which location technologies and tools were utilised within their organisation.

Due to the nature of the researcher's work, the researcher had access to many retail decision-makers on various organisational levels. The researcher also had access to many different types of retail organisations. These ranged from small niche brands to large multi-national brands with a broad product offering. Many of the researcher's colleagues had long-term trusted relationships with retail executives. These colleagues had indicated their willingness to assist the researcher in gaining access to retail executives. The researcher endeavoured to leverage these networks and relationships to gain access to interviewees.

4.6 Measurement instrument

The formulation of the interview guide (research instrument) initially focused on the content and data required to answer the research questions. A critical look at available literature and theory contributed to the formation of the interview guide. This interview guide (Appendix 3) followed a sequenced approach initially focused on broad aspects of location intelligence for retail and thereafter narrowed to more specific aspects of the role for geography and location intelligence for decision-making (Table 2). The reason for this approach was to initially gain trust in the early stages of the interview process. Thereafter, deeper and more detailed questions were asked which related to the understanding of the role of location intelligence on the operational and financial performance of the organisation.

Table 2: Research Question and Interview Question Mapping

Research Questions	**Interview Questions**	
Research Question 1: What is the nature of location intelligence and the application thereof in South African retail decision-making?	1	What is your understanding of the term location intelligence?
	2	To what extent have you been exposed to location intelligence?
Research Question 2: How do business executives in the retail sector perceive the role of location intelligence for competitive advantage?	3	Do you think location intelligence offers retail organisations a level of advantage over other industry players?
	4a	How do decision-makers decide on a new site when expanding operations or targeting new customers?
	4b	Gut feel or by using location analysis methods, or both?
	6	Do you think location intelligence is relevant to e-retail strategy?
Research Question 3: How are executives influencing the adoption of location intelligence technology as a tool for strategic business decision-making?	4c	Is an in-house team or consultants used for the analysis?
	5a	Is location intelligence discussed during executive strategic planning sessions?
	5b	To what extent does senior management play a role regarding the adoption of location intelligence in the organisation?

4.7 Data gathering process

Data gathering was undertaken via a structured interview process. Interviews were conducted by the researcher in a one on one, face to face manner with decision-makers at executive level of organisations. The interviewer leveraged personal and professional networks to gain access to retail executives. The interviewer also utilised LinkedIn to connect and contact with senior retail executives. Where these executives were not available for the interview, the interviewer requested contact information of other decision-makers at a similar level of influence in the organisation to the initial interviewee. The interviewer personally contacted prospective participants via telephone and after gaining verbal consent, the interviewer emailed the participants the research details and purpose, as well as meeting date and time invitation from the interviewee's academic institution email address. During the interview process, the researcher initially ensured that interviewees were comfortable with the time and location of interviews. The researcher also endeavoured to learn as much as possible about the participant before the interview. This helped the interviewer to build rapport with the participant early in the interview process by demonstrating a genuine interest in the participant's position and background. The participant was required to sign the interview consent form as presented in (Appendix 2). This form outlined the purpose of the research and that participation is voluntary. The researcher explained the consent form in full to the participant prior to the interview and requested that the participant sign it before commencing with the interview process. An interview guide was developed wherein all topics and questions were listed (Appendix 3). This guide served to maintain the structure of the interview so that all questions were adequately addressed.

A voice recording device was used to record all interviews and the researcher ensured that the device was in working order and that it had enough memory and battery life prior to interviews. As participants were holding executive roles with high levels of seniority and limited time to partake in interviews, the majority of sessions were scheduled for 30 minutes. The average interview duration was approximately 24 minutes with five minutes of introductions, leaving enough time for the researcher to explain the interview consent form and gain the participant's approval and signature. A total of 280 minutes of interviews was recorded. After interviews, all recordings were sent for transcription to TipTop Transcriptions, a professional transcribing service provider. This service provided a two to three day transcription

turnaround time so that the researcher was able to gain access to the data for analysis purposes.

The researcher conducted a pilot test with one of his fellow students prior to conducting interviews with selected participants. This ensured that all questions were understood, and that adequate data required for the research was gained (Saunders & Lewis, 2012).

4.8 Analysis approach

The analysis was qualitative whereby the interviews conducted were used to understand the retail business environment and the role that location intelligence plays in decision-making processes. The qualitative analytical framework and Ladder of Analytical Abstraction (Matthew, Miles & Huberman, 1994) was followed during the analysis process. This enabled the researcher to analyse the data for the purposes of synthesis and deeper meaning. The researcher firstly packaged the interview data for the purpose of coding, secondly, the data was repackaged into themes and thirdly, a framework was developed whereby the themes could be tested against the theory.

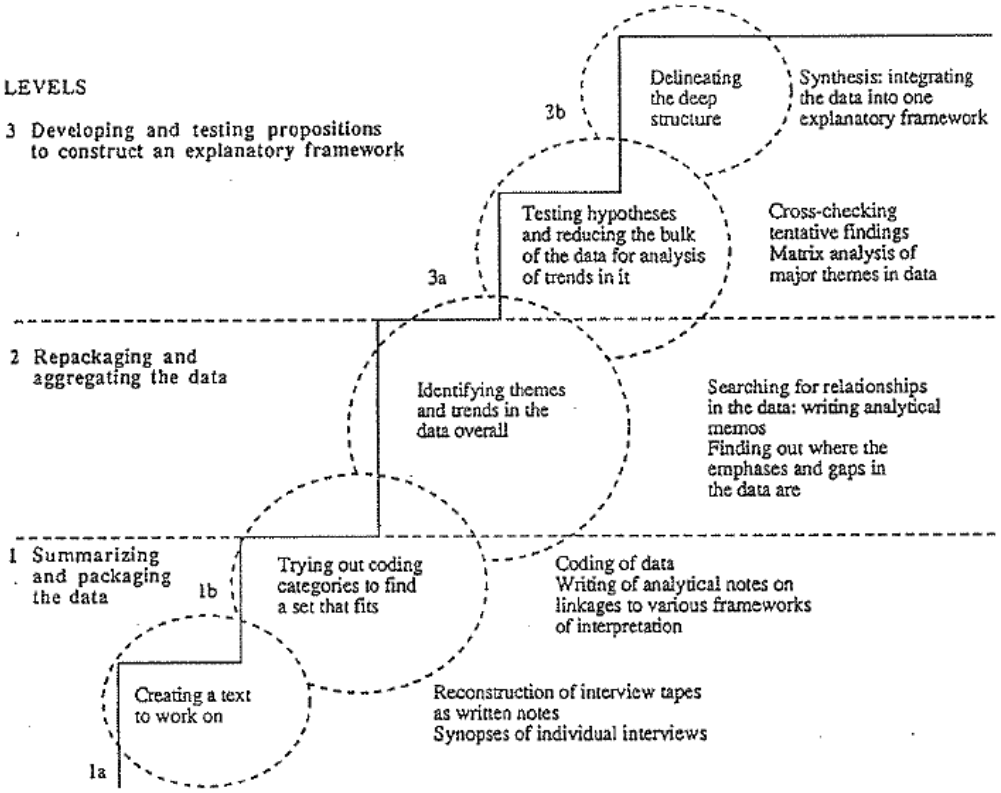

Figure 3: The Ladder of Analytical Abstraction (Matthew, Miles. & Huberman, 1994, p.92)

Common themes, feedback and patterns were compared to location theory where geography is a factor for strategic decision-making. To answer research questions, codes (units of meaning) were formulated and grouped into categories and constructs for theme construction (Saunders & Lewis, 2012). AtlasTI software was used to analyse and package the data for theme and concept building (Figure 3).

These findings enabled conclusions to be drawn between data and patterns found together with academic theory for the research objectives to be met (Saunders & Lewis, 2012).

4.9 Quality Control

Data validity and reliability are key criteria for accurate measurement and ensuring that consistent findings were produced (Saunders & Lewis, 2012). In order to ensure the credibility of the research, the researcher selected interviewees that were representative of the research population. The researcher endeavoured to ensure external validity by selecting executives from many different types of retail organisations in order to ensure conclusions were generalisable (Saunders & Lewis, 2012). Reliability was maintained through testing of data collection methods and analysis procedures which eliminated potential subject bias and unreliable information (Saunders & Lewis, 2012).

Quality control was achieved by continually examining literature, themes and data to ensure that the interpretation of the analysis was credible and trustworthy (Vallaster, Maon, Lindgreen, & Vanhamme, 2019). The measurement instrument and research questions (based on literature pertaining to location decision-making for business) initially tested perceptions and thereafter focused on the adoption of location intelligence for decision-making. The design of the measurement instrument ensured that adequate dialogue occurred and that executives were probed to elaborate on answers provided to questions posed. Prior to interviews, questions were scrutinised for clarity through pilot testing to ensure the interviewees' understanding of questions. Pilot testing was conducted with the researcher's supervisor as well as one of the researcher's colleagues before the commencement of the interview process.

The interviews were captured on a voice recorder to ensure data reliability and trustworthiness for analysis purposes. This provided credible insights for testing against theory and research themes (Saunders & Lewis, 2012).

4.10 Limitations

Possible limitations of the research included personal bias due to the exploratory and deductive approach to the study. Added to the proposed study methodology, additional bias, due to the result of the relationship between the researcher and interviewee, was avoided.

As the researcher had prior knowledge in the geospatial and location analytics industry, he needed to be cautious of bias throughout the research and data analysis process. The researcher aimed to mitigate bias through ensuring that all interviews follow the interview guide and focus on the predetermined questions.

Another potential risk was not being able to arrange interviews with the selected organisations and individuals. As a contingency, additional firms and individuals were identified early in the research process. Due to the level of seniority of the individuals being approached, the researcher was only offered a limited time to conduct the interviews.

Chapter 5: Results

5.1 Introduction

The aim of this chapter is to present the results of the data captured during the interview process and will be structured according to the research questions as documented in Chapter 3. The results and findings of the analysis were derived from the in-depth interviews with retail executives who all hold senior positions within their respective organisations and who have longstanding careers in the retail industry. The structured interview questionnaire allowed the researcher to pose the same questions to all interviewees. These questions were structured to address the respective research questions and ensure consistency with literature on location theory.

5.2 Description of the Sample

The sample consisted of retail executives representing leading South African restaurant chains, Quick Service Restaurant (QSR), Fast Moving Consumer Goods (FMCG) retailers, e-commerce retailers and a beauty salon retail chain. Interviewees (Table 3) consisted of chief executives, managing directors, senior managers, and general managers of which all twelve were male. All interviewees held senior positions within their respected organisations and were experienced in retail decision-making and strategy.

Table 3: Details of Interviewees from the Sample

Interviewee	Role	Brand	Type
Brian Altriche	Founder	RocoMamas	Restaurant
Paul van der Waal	Head of e-Commerce	Makro	FMCG
Willem Strauss	Development Executive	KFC/YUM	QSR
Brett Botten	Managing Director	SPAR	FMCG
Deon Swanepoel	General Manager	Nando's	QSR
Jaime de Abreu	Operations Executive	Ocean Basket	QSR
George Nicolopoulos	Founder	Salsa	Restaurant
Darryl Skinner	General Manager	Pick n Pay	FMCG
David Kitley	Head, SSA	Uber Eats	e-Commerce
Daniel Kourie	Head of Finance	Andiccio24	QSR
Jerry Anthonyrajah	Chief Executive, Jet	Edcon	Fashion Retail
Rudi Rudolph	Managing Director	Sorbet	Beauty Salon

5.3 Saturation

Twelve interviews were conducted in total. As depicted in the below graph (Figure 4), saturation was achieved after ten interviews. After transcript 1, the researcher realised that additional probing was required to gain more feedback and clarity from interviewees. After refining the interview approach, the researcher was able to gain more codes and quotations from the second transcript. The reason for the spike in transcript 5 was due to the nature of the respondent's background and role in the organisation. The respondent was directly involved in the organisation's location strategy and had a background in market planning and location analytics. The interviewees' insights regarding location technology and application to the retail sector caused the increase in both codes and quotations. Post transcript 5, a distinctive trend toward saturation is displayed whereby the number of codes decreases and the number of quotation increase per transcript.

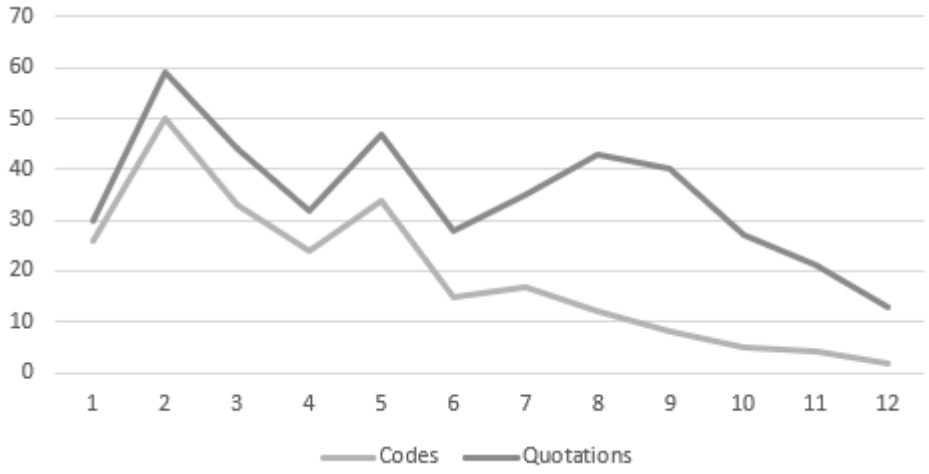

Figure 4: Research Saturation

In general, the number of codes and quotations were relatively low which may indicate a limited understanding of location intelligence by retail executives. This will be further discussed in the sections to follow. Due to the senior positions of interviewees and their limited available time for interviews, the duration of interviews lasted approximately 30 minutes which may also have impacted on the volume of data obtained. All questions were answered by all the interviewees, however, and the researcher was satisfied with the volume and saturation of data obtained for analysis purposes.

The presentation of results aligns with the theory, research questions (Chapter 3) and interview questions (Table 1). Themes emerged from the analysis which will be highlighted and explained under each of the research questions results sections below.

5.4 Results for Research Question 1

Research Question 1: What is the nature of location intelligence and the application thereof in South African retail decision-making?

The aim of this question was to gain an understanding of whether retail executives have heard of or use the term location intelligence in their everyday working environment and decision-making process. The interview questions were specifically aimed to explore the interviewees' perceptions of location-based methods of decision-making and terminology used by retail executives when describing if they utilise location intelligence in their organisations. Themes that emerged from participants' responses were, firstly, their actual understanding of the term and, secondly, the extent to which they apply location intelligence within their organisational context and decision-making.

Figure 5: Research Question 1 Word Cloud

The researcher utilised the word cloud functionality from AtlasTI software to gain insights into the keywords that were mentioned by interviewees. Word clouds were generated per research question to confirm the relationship between research questions, interview questions, constructs and themes.

The word cloud for research question 1 (Figure 5) highlights key words such as location, data, understanding, market, intelligence, area, model and store. These words align with the constructs created under the two themes of “understanding the concept of location intelligence” and “extent to which location intelligence is applied in retail organisations”. Many other words relating to location such as map, environment, business and tool emerged from the interviews which will be explored and discussed in the below themes.

5.4.1 Understanding the Concept of Location Intelligence

The purpose of the first question was to gain insight into the executives’ understanding of the term location intelligence.

Three constructs were developed and ranked according to the number of codes contained within each construct.

Construct	Codes	Rank
Decision-making model, process or application	17	1
Levels of engagement and exposure	8	2
Location terminology differs and is often new to respondents	6	3

In analysing the constructs, it became apparent that location intelligence was in many cases understood in the context of the interviewees retail decision-making model. Many of the respondents referred to their own environment before elaborating on their understanding of the term location intelligence. An executive from a QSR chain stated, “*it depends on what type of retail you’re in; what’s your customer base. So, it’s very important to first identify what’s your target market. Basically, who you’re selling to. So, and then identifying where’s your hot spots for your target market and then using that intelligence that’s available in some analysis to identify these areas.*” When asked about understanding of the term location intelligence, another executive from a rapidly expanding QSR, similarly stated, “*Look, for me it essentially means utilising the data that we are able to either have now or capture in the future and using that data to be able to identify key factors about our current business model*.” This retail model-based understanding was not only evident in the QSR sector but also in the large format Fast Moving Consumer Goods (FMCG) sector where a senior executive of a well-known FMCG retail brand stated, “*My understanding is simple;*

initially it's probably some sort of data model or some sort of tool to assist one in deciding on where to locate stores and in our model for shopping centres, relative to traffic flow, to where people live." When asked about the application of location intelligence, this same executive went on to state that, "*I think for us as well, our model, the firm model is very different to corporate.*"

Interviewees responses varied regarding their engagement with and exposure to location intelligence. Not many of the respondents had been exposed to location intelligence. When asked the question of "to what extent have you been exposed to location intelligence?", responses such as "*I've not personally been exposed to it [location intelligence]"*, to "*we haven't really been exposed to it [location intelligence]*", to "*geospatial analytics is something that I've come across*" were provided. The actual term "location intelligence" was also new to most respondents across all retail channel models with respondents stating, "*okay well, that's something I've never heard before*" and "*I'm not too sure I understand the intelligence part of it.*" A QSR executive with experience in-store planning stated, "*No, in our world it's [location intelligence] definitely not, I don't think. No, I've never heard that term in our world*" when asked whether the term has ever been used in their organisation.

When further probed about their understanding of the term location intelligence, several executives elaborated on how they make location and site decisions rather than defining their understanding of the term. Several interviewees focused on the data and granular components of location analysis where one person stated, "*well it actually takes your current position, and it takes what the current customer is, and it tells you where else you can open in the country with the same demographic*" whereas others understood the term from a more systematic perspective. A senior e-retail executive stated, "*let me think about that. So, 'intelligence' is almost the conversion of data into insight in my interpretation. So, it would be converting, like, your understanding of your area, that location data you have access to and then converting it into insights from which you can make effective decisions. Effective and efficient decisions for your business, strategically, operationally, and financially.*"

After initially asking about interviewees understanding of the term, the interviewer then provided a definition "location intelligence is essentially an umbrella term that encompasses applications, tools, infrastructure and practices that are geared toward the analysis and sharing of spatial or location data and services for decision-making".

An interviewee responded saying, "*it's a broad definition and I think that might be a bit difficult where we in the retail sector are very granular*", whereas another participant said, "*that's good that you define that. Yes, I do think from that perspective we use it extensively."*

Participants also used differing location terminology when responding to questions. One respondent mentioned that other terms were used, "*Location analysis, strategic location, market planning, that's some of the terms that's familiar in our world. And then we also have a specific organisational term called the 'trade zone'.*" This was echoed by others who said, "*so, geo-spatial analytics is something that I've come across before*" *and* "*that was very interesting for me and I immediately fell in love with the whole environment of geospatial*."

5.4.2 Extent to which Location Intelligence is Applied in Retail Organisations

Construct	Codes	Rank
Past experience in location analysis and strategy	11	1
Data relating to location and analysis	11	2
Location data and maps providing insights	5	3

Questions geared to exploring the nature of location intelligence and application thereof offered results which revealed experience and access to location data as key constructs for understanding.

The majority of participants defaulted to explaining their use of data and experience regarding site selection when asked about their exposure to location intelligence. An executive from a large FMCG firm explained how he "*used to put pins on the map of South Africa to represent a hundred customers each,*" whilst a QSR executive stated that "*the stuff that we look at when we look at a site is around the traffic volumes, behaviours, trade and analysis. And then obviously we've got a lot of institutional knowledge which assists with the decision-making.*"

The interview results for question 1 revealed that the understanding and application of location intelligence was about "data". Several participants from all retail channels and models responded with data-centric answers to questions on understanding location intelligence. Answers such as "*for me it would be looking at scientific data that could give us an understanding of the spending power, footfall and foot traffic*

throughout a specific centre, the income bracket, and the demographic" and "*what 'location intelligence' essentially means to me in a very basic way is – we get our customer database in the form of addresses and that's plotted on a map of where each of those customers reside and then from that we can then interpret data and decide what we want to do with it*," were common.

The evolution of the retail environment and understanding of how location decisions were made in the past was raised by participants from large retailers stating that "*if I look at my organisation, we thought we had location intelligence, but it was always based on visiting the sites"* and in the past location decision-making "*was trial and error. We've learned those lessons now*."

Research Question 1: Results overview

Question 1 relates to the nature of location intelligence and the application thereof in South African retail decision-making. Results reveal that the participant's understanding of location intelligence differs depending on their respective retail context and that the term location intelligence is new to most participants. Participants reflected on the term from a practical perspective whereas the minority understood it from a systematic and integrated location decision-making methodology. Results also show that the application of location intelligence within retail firms was described in abstract form around a data-centric and institutional experience perspective for decision-making.

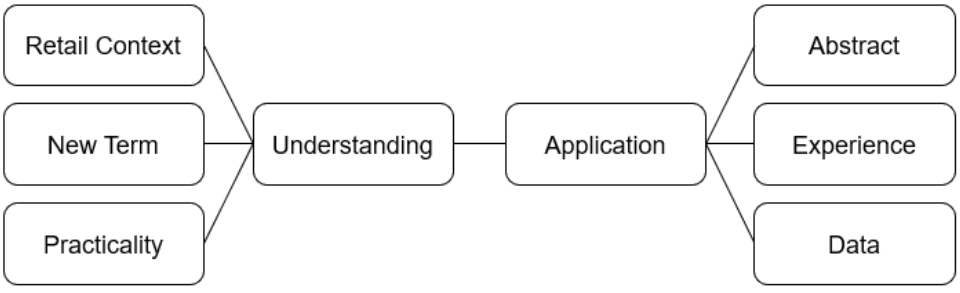

Figure 6: Research Question 1 Framework

5.5 Results for Research Question 2

Research Question 2: How do business executives in the retail sector perceive the role of location intelligence for competitive advantage?

The aim of this question was to understand the processes and techniques that decision-makers have used in the past to make location decisions as well as gain insight into decision-makers' mindsets and perceptions about the role of location intelligence for competitive advantage. In addition to this, the question also aimed to gain an understanding of the factors that influence location decision-making from both an internal and external perspective.

Figure 7: Research Question 2 Word Cloud

The word cloud for research Question 2 (Figure 7), highlights words such as data, location, customer, business, market, stores and delivery. Interestingly, 'data' and 'location' emerged as key words under research Questions 1 and 2.

Two themes were developed from the coding and construct analysis which addresses the research Question 2. The analysis of the constructs contained within these themes will be discussed in the following sections. Codes contained within these constructs reflect the importance of customer data and business model context for competitive advantage and decision-making.

5.5.1 The Role of Location for Competitive Advantage in Retail Business Models

Interview Question 3 aimed to understand whether executives perceive location intelligence to offer retail organisations a level of advantage over other players in the retail industry. Interview Questions 3 and 4 were the most comprehensively answered during the interview process whereby participants explained their decision-making processes and also divulged information regarding their desired requirements from location intelligence technology as well as some of the challenges faced with using location intelligence. The analysis will focus on the constructs ranked 1 and 2 but will also incorporate insights and important perceptions recorded from constructs ranked 3 to 6.

Construct	Codes	Rank
Location considerations for retail business models and customer engagement	27	1
Cost perceptions and firm decision-making for competitive advantage	24	2
The need for location intelligence based on retail model	9	3
The advantage of location intelligence in retail	9	4
Foresight as a means to gain advantage	6	5
Lack of data and consumer information	3	6

Retail models were central to participants responses to interview Questions 3 and 4. Participants represented various different retail business models. Some executives responded from the perspective of a community-based model wherein one such executive explained that their retail model is a communal model, "*Our model is a communal model. Strip malls work well for us, convenient little neighbourhood shopping centres, small little centres with other tenants which are focused on convenience where you might have a bank or you might have a small pharmacy or, in the old days, a video store, but not anymore. So that's where our model works."* When asked about the adoption of location intelligence, a participant from a well-known niche fast-food chain in Gauteng mentioned that "*What we're currently trying to do is just tailor the right package that suits our business model.*" This firm's model is focused on convenience for both takeaway and sit-down options. Another participant from a large FMCG retail chain with hundreds of stores throughout South Africa mentioned that for logistics reasons "*our location strategy for new stores is*

hub and spoke." A commonality that emerged from the interview results is that customer-centricity and engagement are central to the organisation's business models. A participant from a global e-retaining business stated that, "*traditionally a restaurant might have been a fixed size, it needs to be able to sit so many people but because of how fast technology is changing, you know, that restaurant may change its entire structure from previously a drive-through or a sit down into a pick-up, collect, delivery.*" This same executive mentioned that they assist retailers with finding optimal locations for brick and mortar outlets (based on customer data) and "*help build a business model around that with them*" and also commented on business models of traditional brick and mortal being outdated by saying that, "*legacy business models, like, where, you know, they institutionalise and they don't have location data the mantra might be build it and people might come, versus, like, the intelligence saying, "Did they come?*"

A construct that emerged from interviews was the financial considerations for decision-making. When asked about decision-making and cost implications relating to location decision-making, a participant mentioned that, "*with quick-service restaurants, the margins are even smaller than a guy in a fine dining restaurant. QSR the margins are tighter. It's becoming harder.*" When interviewing a founder of a restaurant start-up business about aspects that he considered critical to his business, he mentioned, "*Price, brand, location*." The cost considerations for large retailers when deciding on location is also critical as noted by an executive from a large FMCG retailer who said, "*You've got a huge investment opening a supermarket, the equipment costs alone when opening a new supermarket cost fifteen million Rands. So, it's a big investment you have to make. You have to be careful in the decision-making and I think the analytics helps to understand whether it's marginal or it's going to be highly productive for us. Marginal, we really need to interrogate it*."

When exploring the topic of location intelligence being an enabler for strategic advantage, the responses from participants regarding its relevance was mixed. Responses also ranged by retail model whereby the larger FMCG retailer perceived location intelligence to be important to decision-making compared to participants from the restaurant industry who in general relied on gut feel more than data analytics with a founder of a well-established family restaurant chain stating that, "*I think it's [location intelligence] very important but once again I think the best of the best is only at 60%. Okay, so out of 40%, you've got to make it work and you've got to actually*

really pick apart data." Participants from the larger retailers are of the opinion that location is a must-have with two executives stating that "*it's critical for business*" and "*using data intelligence as much as possible is almost a basic need and a must-have. So, it's not something that's going to set you apart, that's for sure.*" This view was, however, not shared by all participants in the sample group whereby some participants believe that location intelligence will indeed set an organisation apart from the competition. This view was shared across all models with participants stating that "*we've done good work, but I don't think that we've done enough because it really is something that can set ourselves apart from the competitors*" and "*it definitely gives you an advantage over other industry players because it gives you almost a sure bet*." In general, the results reveal that the larger retail firms are reliant on, and intend to invest more in, location intelligence than the smaller restaurant start-ups and traditional brick and mortar outlets, who rely on brand reputation and experience to attract customers.

Most participants are, however, of the opinion that due to customer behavioural changes and the evolution of retail being driven by factors such as convenience and accessibility, location intelligence is becoming more important for decision-making and strategic advantage. The results from the analysis revealed that several participants expressed an interest in a location intelligence application that could aid in predicting future retail trends. When asked about the relevance of location intelligence for future planning, a QSR retail executive stated that "*the retail space is very complex, and location is everything. If we get the location wrong, you sit with a five to ten-year lease where you've got to try and make things work.*" Another executive from a large FMCG retailer mentioned that, "*I would think if you could get some sort of analytical tool or data to assist you in forecasting, what could happen, it would give you an advantage. You could say, 'Okay, we're going to take a position on this site. We know that for two to four years we're not going to make any money, but this is what's going to be happening in the future*.' *So, if that's part of that then I'm saying yes, definitely.*"

Participant's understanding and perceptions about the role of location intelligence of competitive advantage varies by retail model as well as retail organisation size. Factors such as age and professional background of participants may have also played a role regarding the understanding of location intelligence and exposure thereto. These factors will be discussed in more detail in the section to follow.

5.5.2 Factors Influencing Location Decision-Making

Interview Questions 4a (operational expansion considerations) and 4b (the role of analytics versus gut feel in location decisions), as well as interview Question 6 (relevancy of location intelligence for e-retail decision-making), formed the foundation of this theme (factors influencing location decision-making). Factors influencing retail organisations are both internal as well as external and these will be discussed in the below sections. This theme attracted the most constructs and codes during the analysis process as participants explained their location decision-making methodologies and factors that they consider from an operational perspective. In many cases, participants started sharing these factors from early on in the interview sessions which the interviewer revisited in interview Questions 4 and 6 to gain more clarity.

The interviewer's intention was to ask Question 6 during the final period of the interview, but in many cases, the interviewer elected to move this question forward and include it as an additional sub-question to Question 4. The reason for this was that in several instances, participants shared on e-commerce and its effects on the retail environment, so the researcher, therefore, found it fitting to seek further clarity from participants regarding their perceptions of the relevancy of location intelligence for e-retail decision-making.

Construct	Codes	Rank
Factors influencing the decision-making process	32	1
Factors influencing e-retail and location decisions	31	2
Operational processes and considerations for decision-making	25	3
Data and location considerations for e-retail strategy	18	4
Gut feel and decision-making	18	5
Clusters and activity nodes in urban and rural locations	16	6
Data availability and challenges for decision-making	15	7
Various alternative methods for site selection	13	8
Analytics, big data and machine learning	11	9

Participants reported numerous location-based factors influencing decision-making for both brick and mortar as well as e-retail channels. The number of codes developed and ranked 1 and 2 attest to this. The key location decision-making factors set forth by participants across all retail channels included the understanding of customer behaviour, characteristics and location data as well as the emerging

consumer trend of convenience and accessibility. In addition to these factors, understanding market share, competitive landscapes and consumer geographic clusters in both the urban and rural environment were expressed as important considerations for location decision-making.

Understanding consumer behaviour was mentioned by most participants as a key factor for decision-making in the evolving retail environment. A participant said, "*in this modern era, everything is about knowing the customer. It's knowing who your customer is, it's knowing their characteristics and behaviours*." Understanding consumer behaviour and characteristics was a topic that was raised by most of the participants when asked about site selection and operational expansion. Not all participants are, however, convinced that data analytics offer insights on consumer characteristics. As stated by a founder of a popular restaurant franchise who, when asked about how he evaluates sites, said "*I would go to have a look at it (the site), and we make the call. And a lot of it's got to do with gut-feeling, different times of the day and just looking at consumer behaviour, the way people move through areas as opposed to just accepting the data because a lot of location data is given to us from landlords. You've got to do work to understand that entire area*." This same participant also mentioned that he does use a mapping service from a food delivery firm and said, "*It (the heat maps) will blow your mind. At night it (deliveries) increases, day time it (deliveries) decreases so you can start understanding (consumer behaviour) and I use that for site selection as well*."

Within the realm of understanding consumer behaviour, understanding customers' needs for convenience and accessibility was mentioned as key criteria for location decision-making as stated by a participant who said, "*things have changed and then a lot of our marketing research tells us that one of the biggest things consumers seek now is convenience and it's not necessarily only in terms of delivery, but also if I want to have a meal, but if the brand I want is not on my way home, I'm not going to go out the way to get it. You know traffic is mad, a lot of people don't want to necessarily drive far. It needs to be convenient*." The convenience factor is evident from e-retail whereby many participants said that consumers expect a broader availability of options regarding food delivery. A senior manager from a well-known QSR brand said, "*the industry is being disrupted quite hectically at the moment, so with deliveries being such a big thing in our space, the likes of Mr. Delivery and Uber Eats, everyone likes convenience at the moment with delivery. So, that's definitely changing the way*

we're thinking about what a site should look like. I think it's also changing the way we think where a site should be. So, it's not just about access for the customers to our site, it's also access for us to customers in terms of deliveries. Are we in the right area, is it easy to service, and all the rest." The same sentiment was shared by an executive from FMCG retail who said, "*I think they (customers) assume that you should put something within their convenience and if you're out there you're not going to get business.*" Convenience was thus assessed to be key for all retail models. Customers are even willing to pay more for convenience factors as mentioned by a young executive from a QSR brand who stated that, "*it just shows the price sensitivity on these apps is almost non-existent. I mean people are willing to pay for the convenience and the user experience of these apps. It's fantastic and I believe it's because of the tracking*." He added, "*I believe the whole market has changed, it's all about the convenience of it. So, these days you don't actually need to have a massive shop. People aren't going to come and sit down, they want quick and on the go collection and delivery. Which is why these big restaurants are struggling, I believe.*"

The research results show that much of the evolution is being driven by e-commerce and human behavioural habits, such as using mobile technology and consumer applications. A participant from QSR retail said that, "*I do think that as human beings, we do change, we evolve*" which attests to the need for more convenient service delivery as stated by another QSR participant saying, "*we've seen with our e-commerce that we have a large volume of people, probably about 60% who would want delivery.*" Participants from FMCG retail were divided in terms of the relevance of location for e-retail with one executive saying that, "*the whole e-commerce for groceries, it's more to keep us on our toes from the order fulfilment side of things than it is to generate new business*" and another saying that "*there's a lot that we do from an e-commerce perspective. We can tell where our customers are coming from. We can see where customers are shopping in the Northern Cape and where there's no presence of a store anywhere within hundreds of kilometres. So, for that type of thing, we can potentially look at either a drop box or even a pick-up location within that area.*" This executive, however, talked about the challenges that his organisation experiences saying that, "*the biggest challenge within e-commerce business is final market fulfilment. You have to have a good understanding of where your customers are coming from to be able to plan specifically around it, you know, what areas, what type of frequency you go into those areas, what type of vehicle you use going to those areas.*"

Data challenges were shared by many of the participants and specifically those that deliver goods. Many QSR retailers interviewed utilise the services of popular food delivery service providers. These service providers deliver the food but do not share customer location data with the retailer. This was mentioned by several interviewees as a challenge that they are trying to overcome with one such participant saying, "*we're still trying to figure out how this (e-commerce) will impact our location strategy. That's why we developed our own delivery app, to actually get the data from the guys that use the app. Where service providers don't share the customer data with you*." The traditional retailers perceive data as a challenge and e-commerce organisations have capitalised on this opportunity by harvesting customer data for competitive advantage. While interviewing an executive from an e-commerce organisation, the interviewer asked about their retail and commercial model, to which the participant responded, "*so, you know, if for example, our business is to acquire new customers, you're not going to invest marketing money in a mall. We going to rather invest it in a residential area. Like, take Parkhurst as an example, like, you prioritise this area because people are opening up an application. See we access more customers versus the mall. We're not targeting foot traffic, we are targeting digital traffic, so very different ways of looking at location*." This evolutionary process poses a fundamental shift in the way location is being applied to retail decision-making.

Perspectives ranged from a retail operations perspective. Many of the participants interviewed represented organisations who have a franchise retail model where cannibalisation of stores was mentioned as a factor when considering new sites. This is particularly applicable to QSR retail wherein one participant stated, "*a second question will be like, 'will it cannibalise on an existing store?' So, we're very aware of the level of penetration of our stores in South Africa and given that it's a franchise business we have a responsibility on the franchisee to make sure that we don't cannibalise*." This particular interviewee's competitor had a similar outlook saying, "*so, what we'll do first of all, just see if there's going to be any cannibalisation of another restaurant. If there's one just down the road then we're not going to accept the site*." For FMCG retail models, cannibalisation wasn't an important factor as most outlets were owned by the retailer of which one such participant said, "*now every single one of the opportunities that come to us, we have to operate at arms-length*." This executive explained that revenue potential was more important for his organisation saying that his team's role includes, "*looking at the revenue potential for that store, given the demographics of the catchment area they determine to be*

implementing, what the optimal size is for that particular store given the different trading densities for that store in that kind of location, servicing that particular demographic and what the impact of opening a store would be there on our existing asset base and also, what impact it might have on our existing asset base if a competitor store were to open there which impacts ourselves."

The research results also show a variance between how executives select sites in urban built-up areas compared to outer lying towns and rural environments. Participants from all retail models referred to clusters as factors that determine store decision-making on a macro level with an FMCG manager saying that "*we do try cluster our stores based on customer base and size of store.*" Another FMCG executive confirmed this by saying that a lot of store planning goes into understanding the "*proximity to, sort of, transport nodes,*" and that they "*interrogate that for stores that we have in those formats, in those catchment areas. They can tell us exactly which cluster it fits in.*" This executive further explained their store and site selection methodology process says that "*we define our own catchment based on our own assessment of the constraints that we have in that catchment area and then we'd also sort of identify what the cluster would be from an analysis of the information that we have on competitor activity and see, well, how much market share potential is there.*" For this large retail organisation, "*it became very apparent that the stores that were successful were located at activity nodes.*" Clusters are also understood from a micro-level whereby some QSR retailers monitor where large retailers are located in shopping centres or malls and strategically open a store in close proximity as mentioned by an executive who said, "*we generally find that wherever there's a supermarket that's doing well, that's generally one of the indicators that it might be a potentially good location for our brand*." Site selection, planning and store format consideration factors for areas and towns outside of metropolitan areas were also mentioned by participants as a complex, yet important, facet of decision-making with one participant explaining that they "*are in most of the main malls located in Pretoria, Durban, Johannesburg. You start to have to branch out into smaller towns like the Tzaneen's of this world and Bloemfontein, etc… but we might apply a slightly different format to suit that market because the higher-end market is relatively small in the smaller towns and though they are there, you can't survive on that. So, we have to adjust for the people living there.*" A QSR executive explained that "*we find that especially in smaller towns it's really important that you spend the time to better understand the context. There's a lot of movement within small towns where things*

get quiet then people come home for the weekend or the other way around, you know. In smaller places, being on the main road is key. So those are all things that you kind of learn." An e-commerce executive stated that consumer location data reveals more context on buyer behaviour and that the location aspect of site planning is undergoing change as data insights alter, "*your ability to think strategically, like who in which markets are buying handbags, and all of a sudden, like, I should be in them and it gives you that perspective of, where are people shopping for my product versus, if you're bricks and mortar and you don't do paid marketing and you don't meet your customer digitally, how are you going to start selling in Pretoria if you are a store that's located in Jo'burg, how are they ever going to know about you besides word-of-mouth?*"

When asked about competition, a participant said, "*you know for us we try and understand where our competitors are, and we really look at our competitors as all food outlets. You know today I believe gone is the time of looking at only your specific category as your competitor, it's more so looking at how you can steal market share from other guys and understand how they are performing in their areas. Keep your ear to the ground and try and get an understanding of how strong they trade within their current environment and see if it's something that is a similar customer base and really try and gather as much information on the ground as you can.*" Not all retailers are concerned about competition which is due to product differentiation and convenience factors with one executive stating that "*we're not too concerned about that, where competitors are. We'll open right next door to a competitor*." This relates to cluster factors where retailers agglomerate around certain areas but differentiate on product, price and service offerings for competitive advantage.

Participants also had varying perspectives on the use of location data analytics and gut feel for decision-making of which the latter was a common factor throughout all interviews. The term "gut feel" was used by many executives from early in the interview process without the interviewer raising the topic. One experienced, older executive mentioned that site selection, "*is not an exact science. For me, it's still gut feel.*" This sentiment was shared by another participant who serves as the CEO of a large retail chain and who has been in the retail industry for more than 30 years, stated that, "*unintelligent people call it gut feel. I call it experience*." Although the younger executives interviewed shared the need for an element of gut feel in decision-making, their opinions differ from the seasoned executives with a young

executive from a large retailer stating that "*there will be more adoption of location intelligence because also there's a generation gap. We found the older crowd aren't as excited about it, it's more about gut feel or whatever. You often hear the term analysis paralysis from them.*" This view was supported by a young executive from a QSR firm who said, "*I think given the younger generation coming through, there's a lot more interest on data and analytics. Where, with the older generations, some of the older guys, they're hard old retailers, they know whether they are going to make money or not. So, they don't really care about what the data says or what the analytics say.*"

Research Question 2: Results Overview

Results from the analysis of Research Question 2 reveal the complexity of location decision-making in retail and that one size does not fit all. This complexity will be further analysed in Research Question 3. Perceptions and mindsets of decision-makers regarding the role of location intelligence for competitive advantage vary by retail model and organisation size which relates to location and site selection factors that decision-makers consider important to maintain competitive advantage.

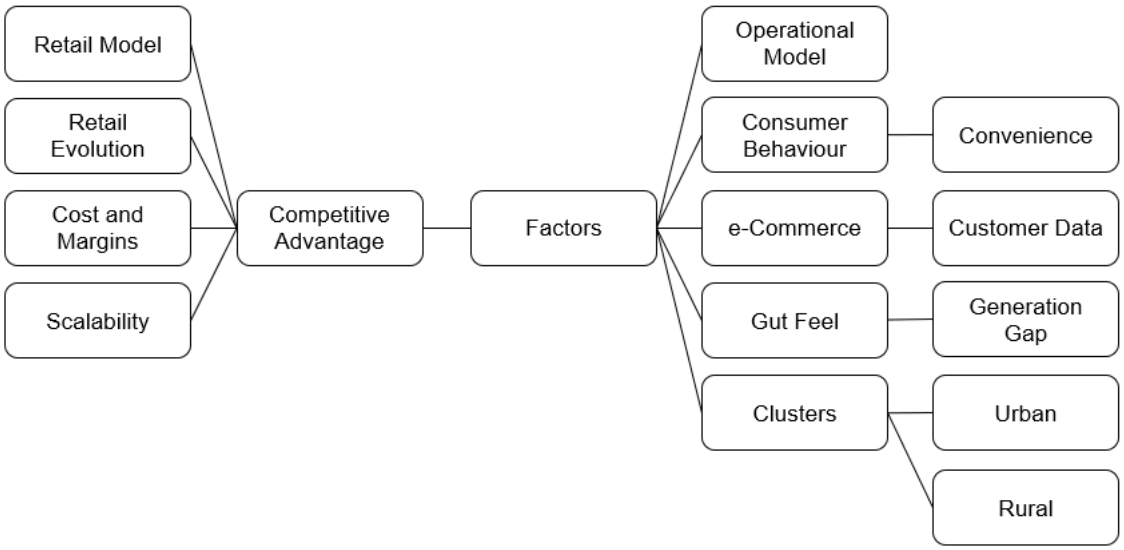

Figure 8: Research Question 2 Framework

Competitive advantage is understood in the context of retail models such as QSR and FMCG. Many retailers are facing challenges regarding the understanding of consumer buying and behavioural changes driven by technology and the need for convenience.

Results also reveal that the role of location intelligence for competitive advantage differs by organisational size as well as mindsets of executives. These organisational differences and individual mindsets, together with all factors enabling competitive advantage, will be discussed in the following chapter.

5.6 Results for Research Question 3

Research Question 3: How are executives influencing the adoption of location intelligence technology as a tool for strategic business decision-making?

The aim of this question was to understand the mindsets of decision-makers regarding the adoption of location technology as a tool for strategic decision-making. The question also endeavoured to explore the extent to which location intelligence resources and technologies have been applied within the participants' organisations as well as gain an understanding into whether organisations are building their own in-house capabilities or outsourcing location analysis to external advisory consultants.

Figure 9: Research Question 3 Word Cloud

The word cloud for Question 3 (Figure 9) which reflect interview Questions 4c as well as 5a and 5b, highlights words such as new, store, understand, site and market which suggests that participants understanding of location intelligence may be a relatively new concept. The sections to follow in this analysis of Question 3 will shed light on executives' mindsets in the context of location strategy and their role regarding the adoption of location intelligence.

5.6.1 The Evolution of Retail Complexity Driving Adoption

Interview Questions 5a and 5b aimed to explore the extent to which senior management play a role regarding the adoption of location intelligence in their organisation as well as understand whether location intelligence is a topic or concept that is discussed during executive strategic planning sessions. The results have shown that the adoption of location intelligence corresponds with executives understanding which ranks number 1 with most codes. Participants also mentioned many challenges facing their organisations and how understating the complexity behind retail is becoming important to location decision-making. This is shown under the second-highest ranked construct. Construct rank 3 provides insight into the level of engagement from a strategic perspective and results for construct 4 offers context about location factors that influence discussions in organisations.

Construct	Codes	Rank
Levels of adoption based on executive buy-in and understanding	26	1
Understanding complexity and challenges facing retail organisations	21	2
Levels of engagement and discussion about location intelligence	12	3
Location factors influencing discussions	8	4

When asked about whether location intelligence is discussed during executive strategic planning sessions, answers from participants differed based on organisation size and executives' understanding of location intelligence. Many of the participants from large established brands said that location was discussed. An executive from a large FMCG brand said, "*I think it's completely top driven. So, everybody around the organisation organises around being able to deliver what's required to make the right decisions and to execute once the decisions are made. I mean, in a business like ours, you're not looking for every little corner to put a shop on. It's got to be a very, very strategic discussion. To be able to manage that properly, location is massively important.*" The results also show that the adoption of location intelligence may have to do with the organisation model or size with an executive from a smaller QSR brand with approximately 24 stores saying that, "*It [location intelligence] hasn't been discussed, no,*" compared to an executive from a large retailer with over 500 stores who said, "*for the past two years it [location intelligence] is probably the number one thing that we're looking at. One of our biggest strategic objectives is portfolio optimisation so that's really closing, right-sizing, relocating,*

consolidation, etc… and that's a massive ongoing process." A participant from QSR brand with over 300 stores mentioned that "*location, especially in South Africa, is a big topic of discussion.*" A competitor to this particular QSR brand shared the same opinion saying, "*I don't see how you can grow if you don't have any insight or intelligence on location analysis and location strategy. So, for me it's a really important part of any retailer, to know where you want to go.*" As stated by an executive from one of South Africa's most popular supermarket brands, "*location is everything.*"

Retail brand was also mentioned as a factor driving the adoption of location intelligence with larger, more established brands, seeking alternative means to maintain competitive advantage. An executive from a popular restaurant brand with over 150 restaurants throughout South Africa said, "*location features quite predominantly now because we're a brand that's reached 25 years of age. So, we're quite an old brand in the market. So, the predominance and the growth of our brand now needs to look at where we belong and where we don't.*" A CEO from another retail brand with a very large footprint that has very seldomly used any location intelligence in the past for store planning also alluded to the need for location intelligence saying, "*I think it was easier in the beginning when we didn't have a store in Sandton, didn't have a store in East Gate, didn't have a store in Cresta. Now it's starting to become a little bit more difficult because we are so largely distributed, so now we've got to start picking very intelligently, we've got to pick our sites a little more scientifically than before.*"

Results from the research reveal that executives' mindsets toward location intelligence are changing as the retail environment becomes more competitive and consumer behavioural habits change. A participant from a well-known FMCG retail brand said that for their firm, "*it (location) has become tougher to* predict," saying that *"I don't know if you picked this up in other discussions but before 2008/9 it (location planning) was a lot easier. Because in those days you could, in the hey-days of retail, I would say from about early 2006 to 2007, you almost couldn't miss, you know.*" After asking why this may be, the participant responded saying, "*I've been in this game for a long time. The variability or the fluctuations in just our revenue from week to week is actually unbelievable versus last year. The one week you're 1520% up on last year, the next you're minus 10%. No, it's just unbelievable. I've never seen it in my life before and it's so difficult to predict.*"

Several participants commented on the complexity of the South African retail environment and that understanding location is a challenge for all retail models as mentioned by an e-commerce executive who said that South Africa, "*is such a complex country to deliver in.*" The results reveal that as markets get tougher, retailers tend to seek alternative means to maintain competitive advantage and location intelligence may be such an alternative with a participant stating, "*we're looking at it [location intelligence], we understand the importance of it and we definitely don't know the capabilities of it and all it produces. It's something that we've realised is very important in the future, something we'd love to implement in the short-term.*" Although many participants understand the value and intend to utilise location intelligence for decision-making in the future, some executives are of the opinion that most retail firms are already using location intelligence. A participant from a large retail brand shared that "*from what I've heard, I think a lot of retailers are really starting to embrace true location intelligence over the last few years.*" This participant commented on the adoption in his own organisation saying that, "*I think in terms of adoption it hasn't gone as well as it should have.*"

The results show that location intelligence is not well understood in the South African retail industry and that adoption is driven by a need to respond to changes in the retail environment rather than to a proactive approach to maintaining competitive advantage.

5.6.2 Considerations for Insourcing or Outsourcing Location Decision-Making

As a means to gain understanding into the adoption of location intelligence, the researcher asked participants whether they are building their own internal organisational location intelligence capabilities to analysis or if they are outsourcing this work to external consultants. This formed part of Question 4 after asking participants about how they or their organisations decide on a new site when expanding operations or targeting new customers.

Construct	Codes	Codes
Internal firm capabilities and experience	16	1
The role of consultants and networks in retail	16	2
Challenges with utilising external parties	6	3

Three constructs were developed from interview Question 4a. Two address internal and external considerations whilst the other construct addresses the challenges firms are facing by utilising the services of external parties for site analysis and planning.

Similar to the results from the previous theme (the evolution of retail complexity driving adoption) regarding the extent to which organisations discuss location intelligence in strategic planning sessions where larger organisations are engaging the topic more than smaller firms, the analysis of interview Question 4a shows that the larger firms are also more geared to developing internal location intelligence capabilities, compared to the smaller firms. Some participants that were interviewed from the larger firms mentioned that they do have internal analytics capabilities and teams which are dedicated to location strategy and planning. A general manager from a large retail brand explained, "*under the property services division, we have got a dedicated in-house branch that looks at location analysis. It's called our Site Research Division.*" The participant explained that the organisation employs a "*senior site researcher and a site researcher,*" and when asked whether they outsource any location intelligence work, the participant replied, "*no. it's entirely in-house.*" When asked if the participant believed the strategy to build in-house capabilities was beneficial, he responded, "*I think, you know, it was a good decision for executives to step in and say, 'let's go external on this or in-source,' and that has been ground-breaking for us. It's been revolutionary.*"

Other large retailers are following the similar trend of building internal capabilities as mentioned by another participant from a large fashion retail brand who said, "*so three or four years ago when I joined, we created a team that started to get location data. Now we have a property analytics team in-house.*" A founder of a restaurant brand with 24 stores throughout South Africa said that he leverages his holding company for data and intelligence regarding opportunities for new sites saying that, "*the way it really works is that the team (from the holding company) would try and narrow the sites down to a point that it's worth my while going out to see the sites. So, they'll get hundreds of sites sent to them on a daily basis and they narrow them down and say okay these ones are better for QSRs, these ones are better for restaurants. Then we all get sent the sites for restaurants, and I actually physically drive out there myself and so I gather as much information as I can.*" This site selection approach is very different from the approach used by the large retailers.

In many cases, participants from all retail types and sizes said that they do outsource location analysis and planning to external consultants. A founder of a popular restaurant brand with over 70 stores said that "*in Cape Town, we did actually get a company to do data analysis for us so we can capitalise on a particular store and we went with the data.*" Another executive from a large QSR retailer who had previously done all location analysis work in-house, said that "*this is maybe the first year in the history of the business that a third party is used to validate the market plans. Just almost giving their stamp of approval. We chose a local South African company because we believe that they've got the best retail insight and retail knowledge on the continent. They've walked the streets, they've done a lot of research projects in these countries, in these cities. So, we actually thought that there's no substitute for experience on the ground.*" Another participant from a large FMCG firm stated that "*the new business team is responsible for finding and sourcing new sites and they would use a consultant to assist them on the demographics and try to asses, you know, what the slice of the pie would be. The target market, for instance.*" Not all participants shared the same confidence in consultant services. An executive from a large FMCG retailer said that "*I look at the external agencies with a good deal of circumspection. Most of what we've found is that the research agencies are telling developers what they want to hear. If they're not telling them what they want to hear they run out of business, you know.*"

The research found that other retail organisations tend to prefer leveraging their personal networks and doing their own research and not relying on a consultant's site selection. Participants that were interviewed from the two smallest organisations both confirmed this, with one such participant saying, "*we know Cape Town from a bit of personal tourism. We've been there a few times, I've got a lot of friends who live there and have spoken to other people in the industry as well and they let us know how they're doing there and where the good areas are. Just from talking to them we know the restaurants that are doing very well and the areas that they're in so based on that, we selected this location in Green Point.*"

The results also reveal both positive and negative opinions toward the use of consultants for location analysis and advisory. An executive from a large retail brand said, "*I think they (consultants) need to be able to take risks. So, for example, sharing the upside. So, if you advise a client on a site and are charging high rates, it should also be conditional on success of the site. You need to show some sort of*

confidence." Consultants in general, produce reports and step away leaving the firm to make their own location decisions. Consultants services are also perceived to be expensive as mentioned by a participant who said, "*we don't necessarily engage with companies that provide the service. Because it's also not cheap.*" This sentiment was shared by participants from all retail types and models with a chief executive from a large retailer saying that "*I do think it's moving more to the model of getting the data sets and having your own team do the work as opposed to paying for a consultant to do it.*"

Research Question 3: Results overview

Results from the analysis of research Question 3 reveals that the adoption of location intelligence is driven by factors such as firm size and brand, whereby the larger, more established brands with the highest market saturation are turning to location intelligence as a means to maintain market share by outsmarting the competition through leveraging data analytics. These organisations typically have the budget to build internal capabilities. The smaller restaurant and QSR brands with smaller footprints generally follow the market and utilise personal networks and retail experience rather than location intelligence for location decision-making.

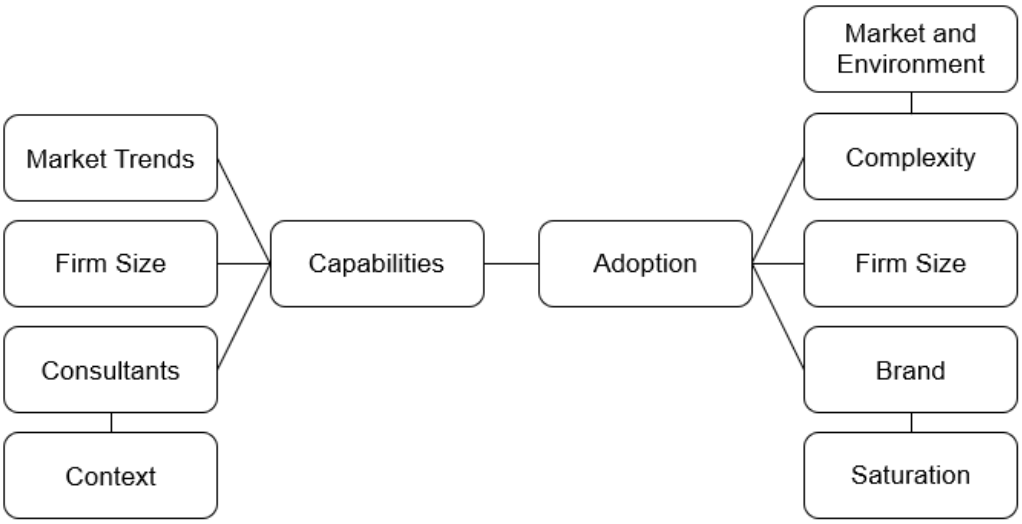

Figure 10: Research Question 3 Framework

Results regarding executives' attitudes to building internal capabilities for location decision-making or outsourcing the analysis and advisory to external consultants are driven to a large extent by firm size and retail context which correlates with the results on adoption.

Chapter 6: Discussion of Results

6.1 Introduction

In this chapter, the findings will be discussed in terms of the relationships between the research Questions (Chapter 3) and literature (Chapter 2) which will then be compared to the research problem and purpose (Chapter 1) to ensure that the research objectives have been met.

The findings of the research contribute to a deeper understanding of the adoption of location intelligence in retail decision-making for competitive advantage together with the factors driving location decision-making and areas for future research that are currently unexplored in literature review.

6.2 Discussion of Results for Research Question 1

Research Question 1: What is the nature of location intelligence and the application thereof in South African retail decision-making?

The aim of this question sought to gain an understanding of whether retail executives have heard of, or use the term location intelligence in their everyday working environment and decision-making process. The research question further sought to understand the extent to which location intelligence is applied within research organisations.

6.2.1 Understanding the Concept of Location Intelligence

At the onset of the interview process, the interviewer sought to gain an understanding of executives understanding of the term location intelligence. After asking the first interview question, the researcher provided participants with a definition of location intelligence. Location intelligence can be defined as applications, tools, infrastructure and practices that are geared toward the analysis and sharing of spatial or location data and services for decision-making. As a branch of business intelligence, the definition of location intelligence has been adapted from that of business intelligence which states that business intelligence is an umbrella term which includes applications, tools, infrastructure, and practices to enable access and analysis of information to optimise performance and decision-making (Gartner, 2019).

Although the concept of location intelligence was new to the majority of participants, many had been exposed to elements of location intelligence such as the tools, practices and analysis of spatial data. Terms, such as geospatial analysis and market planning, were shared by participants from all retail formats. One participant with a background in e-commerce provided the most accurate response stating that location intelligence enables, *"effective and efficient decisions for your business, strategically, operationally, and financially.*" This was the only response which viewed location intelligence in a systematic manner for business decision-making of a strategic nature. All other responses were focused on a more granular monadic level relating to store planning and site selection.

"Location data" was a key phrase that was mentioned by many participants. Hernández and Bennison (2000), as well as Reynolds and Wood (2010) show that retail organisations have in most cases, access to rich datasets for strategic decision-making. This was mentioned by many participants when asked about the application of location intelligence within their organisations. Location intelligence is concerned with the tools, technologies and infrastructure for sharing the data for decision-making purposes.

Participants understanding the concept of location intelligence was closely aligned to the implications of choosing a specific location for a store and its potential implications for business revenue. This confirms the link with location theory wherein it is stated that the key question in location theory is, "which are the motives to choose a particular location and which are the geographic implications?" (Gorter & Nijkamp, 2001, p. 9014).

6.2.2 Understanding Application of Location Intelligence in Retail

The research findings reveal that the internal environment plays a major role in terms of the understanding and application of location intelligence. As shown in (Figure 6), three key factors influence the understanding of location intelligence, namely the retail context, terminology and practicality. The retail context relates to the retail environment and model. In response to interview Question 1, the majority of participants referred to their own internal environment and retail model. They then divulged on how location applies to their model.

The application of location intelligence in retail business models will be discussed in more detail in the following section (discussion of results for Research Question 2).

Terminology was a factor for understanding the term location intelligence. Although location intelligence has become common language in the geospatial and GIS industries (Dangermond, 2019), the research reveals that this terminology is not understood and used in the majority of the organisations interviewed. For the majority of the participants, the interview was the first time that they had heard of the term, location intelligence. After providing the definition, many executives alluded to other location-related terms such as geospatial analysis and that they have in the past used location analysis in support of their business model. Participants from FMCG and QSR retailers whose brand had a large store footprint in South Africa mentioned that they are utilising external vendor web-based mapping applications to understating demographics, income levels and living standard measurement criteria for site selection and store planning. This supports the findings from academic literature on location analysis and retail which reveals that despite many organisations utilising geographic customer and market databases for store location analysis, the integration of these databases into strategic decision-making was lacking (Reynolds & Wood, 2010).

6.2.3 Application to the Retail Decision Model

The location planning and decision model (Figure 1) developed by Hernández and Bennison (2000) offer a framework, whereby GIS and decision-making activities may be linked. The model's four components, namely the external environment, the internal environment, locational management, and the property portfolio are interrelated and location plays a role in decision-making throughout (Hernández & Bennison, 2000). Regarding the nature of location intelligence and application thereof to retail decision-making, the research has found that the understanding of the term differs based on retail context and business model. Participants responded from an internal practical perspective rather than the more systematic decision-making model approach as depicted below (Figure 11). This approach is more reactive than proactive from a location perspective.

When applied to the retail decision model (Hernández & Bennison, 2000, p.359), the research has found that both the understanding and application of location intelligence is applicable to the internal environment of a retail firm model. It was also found that the understanding of location intelligence is applicable to the macro external environment due to the technological factors of the term which essentially encompasses gaining insights into macro conditions for decision-making. The research found that the application of location intelligence is applicable to monadic decision-making factors (Hernández & Bennison, 2000) which encompass the selection of sites for store expansion or relocation.

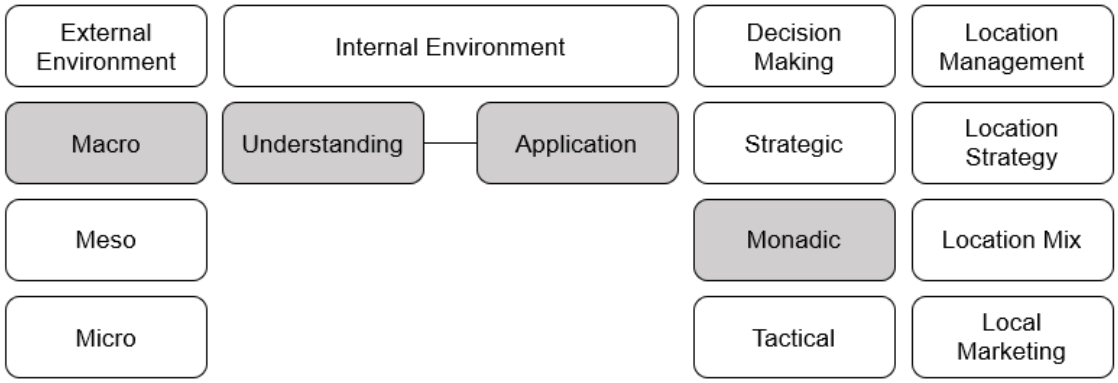

Figure 11: Research Question 1 and Retail Decision Model

6.3 Discussion of Results for Research Question 2

Research Question 2: How do business executives in the retail sector perceive the role of location intelligence for competitive advantage?

The aim of this question sought to gain an understanding into the processes and techniques that decision-makers have used in the past to make location decisions as well as gain insight into decision-maker's mindsets and perceptions about the role of location intelligence for competitive advantage. In addition to this, the question further sought to gain an understanding of the factors that influence location decision-making from both an internal and external perspective.

6.3.1 The Role of Location Intelligence for Competitive Advantage

With new entrants into the market, the evolution of consumer behaviour and retailers becoming ever more innovative, the topic of location intelligence is becoming more pertinent for firms seeking competitive advantage.

Strategic interaction and location choices of firms have, however, been largely overlooked in literature (Alcacer et al., 2015). The research has found that there is a correlation between literature stating that firms are seeking new ways to outcompete rivals and executives' mindsets toward the intention to adopt location intelligence as a means to be more competitive. Retail model was a key term raised by participants when describing how location plays a role in competitive advantage. This finding correlates with theory on retail and evolutionary behaviour of consumers, whereby escalating customer expectations, and heightened competition are creating a situation where retailers are needing to be more innovative in their approach to business models (Sorescu et al., 2011).

The research has revealed that of the majority of firms interviewed, location was applied as a tactical tool to the business model as a means to gain competitive advantage. This process took place after the model was chosen, whereas the theory is revealing that to be strategic, a firm needs to incorporate location considerations when designing a business model. As stated by Casadesus-Masanell and Ricart (2010), designing business models to reach goals is thus a reflection on the strategy and subsequent tactics. Tactical choices are relatively easy to change compared to strategic choices made in formulating the business model which are not easily reversible (Casadesus-Masanell & Ricart, 2010).

Some participants mentioned the large cost implication of location choices. These choices were also based on retail models and formats, whereby location was more important for larger FMCG retailers compared to QSR's which required less investment in store development. Retail location choices, due to the very nature and financial implication, are not easily reversible as development costs are high and retailers often need to enter into long-term lease agreements to occupy a certain site or location (Sorescu et al., 2011). According to theory, these decisions should be considered as strategic rather than tactical as the selection of these locations is a critical strategic decision which inevitably affects the long-term sustainability and profitability of the retailer as a substantial investment is required when developing and resourcing a retail store (Shivakumar, 2014). Location is essentially the most important factor affecting retail success (Yildiz & Tüysüz, 2018).

Findings show that due to technological change and the customer's need for convenience, customer location, rather than store location, is becoming more important to restaurant chains and QSR's. This correlates with literature which states that geographical location of retail stores and customers distance to those stores has become less important. This is due to technological change, consumer behavioural changes and the ability of retailers to deliver services faster from online platforms (Kumar et al., 2017).

Participants from some firms interviewed, stated that they target a specific customer segment or market, based on demographics. These specific organisations, however, had not adopted location intelligence or location strategy into their business model. This differs from the theory where retail business models that are primarily based on the location of their stores on the basis of competition with rivals, regard store location strategies of particular importance. These strategies are concerned with store location in relation to customer demographics. An understanding of the local demographic landscape assists retailers in distinguishing themselves against their competition by utilising tactics, such as store-level pricing and store formats (Kumar et al., 2017). Strategies concerned with e-retailing differ in terms of their approach to location analysis. As mentioned by an e-commerce executive, the measurement criteria differ from traditional brick and mortar which typically decide on a business model, build and measure if customers arrive compared to e-commerce which relies more heavily on customer data and intelligence in their business models to inform decision-making.

Participants from mainly FMCG retailers shared that to maintain competitive advantage, the ability to predict locations that could drive future profitability was important. As stated by Reeves, Haanaes and Sinha (2015), the adaptive approach (difficult to predict and continuous change) to strategic decision-making is most applicable to the retail industry and the key to what executives need to consider is planning the unplannable. This confirms that there is alignment between theory and the perceptions of retail executives who are considering the future effects of consumer behaviour on their location decision-making. The research has thus found that larger retail organisations are exploring location intelligence as a means to remain competitive.

6.3.2 Factors Influencing Location Decision-Making

Various factors were mentioned by participants when divulging on their locational decision-making. Again, these factors were to a large extent based on the firms chosen retail model and tactics employed to gain competitive advantage over the competition. Some retailers chose a community or cluster retail model, whereas others chose a hub and spoke model. According to Porter (2000), knowing the spatial distribution of customers and linkages with suppliers, buyers and other industries are important for efficiency and economic growth as well as innovation.

Based on the findings, retails models are not only about competitiveness on a micro and industry level but also advantageous on a macroeconomic level. These advantages have centralised economic activity thus creating clusters (Gorter & Nijkamp, 2001). According to many participants, clusters models are more important in rural areas than areas in cities.

Research by Hernández and Bennison (2000) has also revealed that retail location decision-making is both an art and a science. Their research from almost two decades ago shows that the vast majority of retail decision-makers continue to rely on personal experience and gut feel when making location decisions but that the trend toward the adoption of more formalised approaches to location decision-making is increasing (Hernández & Bennison, 2000). The research has found that in South African retail organisations, similar to the findings of Hernández and Bennison (2000), the majority of retail executives also rely on gut feel and experience when making location decisions. The research results further confirm that the trend toward a more formalised approach to location decision-making is especially true for the larger FMCG retailers compared to the smaller restaurant retailers which in many cases are relying on experience and gut feel to make decisions (Hernández & Bennison, 2000). Results from the research also confirm that participants interviewed who represent restaurants and smaller QSR's are more reliant on experience and gut feel for location decisions, compared to participants interviewed from large FMCG chains which already have, or are in the process of, developing in-house data analytics capabilities (resources, tools and technologies) for location decision support.

The research further revealed that based on the sample of participants, it appeared that older generation retail executives are less likely to adopt location intelligence for decision-making compared to their younger counterparts. These findings were stated from the perspective of younger executives who believed that their older counterparts had not grasped the importance of data analytics to inform decision-making. Some older executives were explicit in their views that location intelligence is not as important as experience or gut feel. The literature, however, differs from the perspectives of older retail executives interviewed. Location intelligence is becoming a key part of business intelligence as it is allowing firms to geo-target customers through analysing spatial patterns and optimise products, pricing and marketing campaigns for those customers (Said & Torra, 2019).

As consumer behaviour evolves and customers seek more convenient and accessible retail solutions, the research has found that retail business models need to change accordingly to remain competitive. This supports the theory that due to the internet, brick and mortar retailers are having to rethink their business models (Teece, 2010). Many participants mentioned the need to gain a deeper understanding of consumer behaviour in order to adapt their business model for competitive advantage. This aligns with the literature, wherein it is stated that some retailers are radically reducing store sizes in areas where there is high foot traffic while adapting their product range in these locations to the target market. This helps retailers achieve a higher level of customer efficiency by enabling easy access to products by offering a product in multiple locations (Sorescu et al., 2011). Understanding customer behaviour is also helping retailers decide on a retail format, such as a small kiosk format, which is located in areas that are easily accessible and convenient for customers (Sorescu et al., 2011). By analysing and sharing customer data insights, location intelligence is able to guide decision-makers in formulating new retail model considerations.

Both of the participants interviewed who are involved in e-retail, as well as a number of the executives whose organisations are delivering products and services to customer locations (e-commerce), believe that leveraging data analysis to gain market insights for competitive advantage has become a ‘must-have’ and is no longer a ‘nice to have’. This finding is in alignment with literature which states that location factors together with integrating channels and big data analytics has now become a prerequisite of competitiveness (Grewal et al., 2017).

Big data analytics is typically customer-centric, whereby retailers can gain more insight into customer locations and buying behaviour in order to craft products and services to meet those customers' needs. The research has found that due to increasing competitiveness and changing consumer behaviour, participants from predominantly QSR retail formats are planning to, or are in the process of, developing their own online and mobile delivery application. These retailers intend to mine their own customer location data in order to compete with e-retail service providers which charge a fee for retailers to use their platforms and also do not share the customer location data. Research findings support and extend the literature that customer location data has thus become a factor of competitive advantage for retail decision-making.

6.3.3 Application to the Retail Decision-Making Model

From the perspective of the external environment, both competitive advantage and location factors have been deemed to be macro by nature. This is due to the retailers having to understand the broader economic, demographic and competitive retail environment for decision-making. The research has found that perceptions about the role of location intelligence for completive advantage are formed by the retailer's internal environments and capabilities as, in most cases, retail business models are driving the need for location decision-making based on a certain set of criteria determined by the selected business model.

Factors influencing location decision-making are both internally and externally driven. These include macro factors, such as economic clusters and technological change, as well as meso factors, such as domain-specific trends affecting the firm. These trends include changes in consumer behaviour, such as the need for convenience and easy access to products and services. Micro factors, such as location marketing for customer engagement have also been found to affect the internal environment.

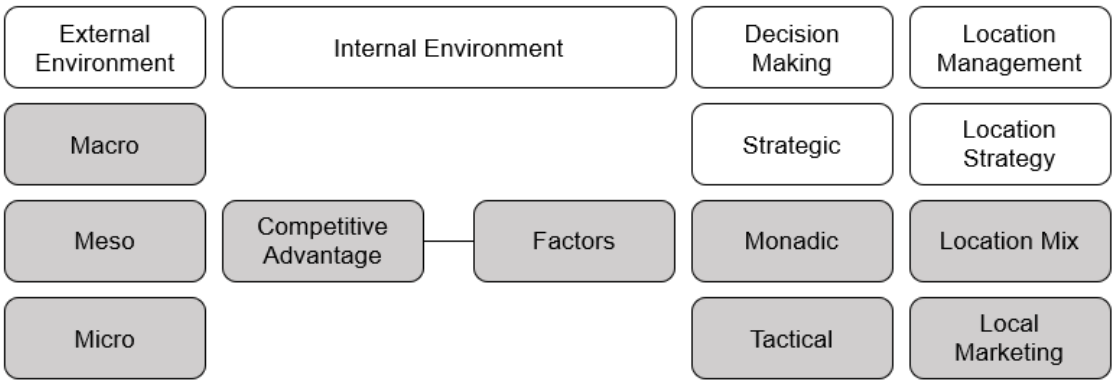

Figure 12: Research Question 2 and Retail Decision Model

Lee and Kim (2018) state that most studies previously conducted on retail location were focused on understanding tactical decisions and not strategic decisions on a corporate level. The research results confirm that, for the majority of participants, location decision-making in retail models is understood from a monadic and tactical level which drives location mix and location marketing decisions.

The reason why most previous studies have not been conducted on understanding location at a strategic level may be due to internal factors such as generational differences and gut feel driving location decision-making, whereas this research now shows that external factors such as technological change and consumer behaviour are driving location decision-making.

6.4 Discussion of Results for Research Question 3

Research Question 3: How are executives influencing the adoption of location intelligence technology as a tool for strategic business decision-making?

The aim of this question sought to understand the mindsets of decision-makers regarding the adoption of location technology as a tool for strategic decision-making. The question also sought to explore the way in which location intelligence resources and technologies have been applied within the participants' organisations as well as gain an understanding into whether organisations are building their own in-house capabilities or outsourcing location analysis to external advisory consultants.

6.4.1 The Adoption of Location Intelligence for Strategic Decision-Making

The results of this research have found that the adoption of location intelligence in high-level corporate strategy is not well understood and adopted by the participants interviewed. According to Shivakumar (2014), strategic decisions require a significant level of commitment and are also complex in nature and require a systematic approach to problem-solving. The majority of participants perceive location intelligence to be a concept, whereby location data is analysed to inform site-specific decisions. Participants do, however, concur that location intelligence is becoming more important for strategic decision-making due to the increasing level of complexity in the retail industry. As stated by Harrison (1996), strategic decisions deal with the long term success of the organisation and encompass numerous complex dynamic variables. Participants echoed the sentiment that the level of complexity in the sector is increasing which is driving the adoption of location intelligence.

A significant level of commitment to planning and implementation is required for strategic decisions as they modify the scope of the organisation. Strategic decisions also influence tactical decisions. These decisions are often motivated by changes in consumer behaviour (Shivakumar, 2014). The research findings expand the literature as participants from large established retailers with a vast store footprint stated that location strategy needs to be adopted and driven from the top. Similarly, the results revealed that established QSR brands with many stores agree that the evolution of retail and consumer behaviour change is driving the adoption of location intelligence and that location is key to the successful implementation of the retail strategy. Theory confirms that location analytics is largely being driven by the accelerated rate of retail evolution due to technological change and evolving customer behaviour (Grewal et al., 2017). We see now from the findings, that smaller QSR retailers and restaurant chains share the view that customer behaviour is changing but are not as supportive of the adoption of location intelligence as the larger retailers which have a substantial investment in brick and mortar stores.

Customer behaviour is to a large extent being driven by mobile technology and online ordering platforms and applications. This evolutionary process is fundamentally changing the retail environment and the way retailers should approach their strategic decision-making. As customer behaviour changes with the adoption of mobile

technology and online ordering, retailers should rethink their targeting strategies based on customer locations (Kumar et al., 2017). This shift in thinking from a brick and mortar model where customers are targeted and attracted to a store to purchase a product is changing to a model, whereby retailers are adopting strategies to target customers based on their location. This is evident from the findings, whereby participants stated that they are becoming more focused on understanding customer locations and movements.

Due to the competitive environment, pressures for retailers to adopt and employ more locational decision-making tools (such as location intelligence), has grown (Hernández & Bennison, 2000). The research findings expand the literature wherein it has been revealed by participants that competitiveness of retail brand was a factor driving the adoption of location intelligence with larger more established brands seeking alternative means to maintain a competitive advantage. Challenges in understanding the technology, coupled with building internal capability (to be discussed in the following section) and financial considerations of location intelligence, were additional factors influencing the adoption.

6.4.2 Firm Capabilities for Location-Based Strategic Decision-Making

According to Lee and Kim (2018), a well-designed location strategy formulation is a key component for retailing success. Building capabilities to support and implement the firm's strategy is critical. This view is supported by participants from large retail firms who are building internal capacity and location analytics capability to strengthen location decision-making. Lee and Kim (2018) also note in their research that geographers have contributed a great deal to retail location strategy as they have highlighted the strategic dimensions of retail locations as well as researched location strategies from the perspective of the retailer's footprint. Of all the participants interviewed, only one executive had an academic background in geography. This particular executive supports the organisation with location strategy. Reynolds and Wood (2010), researched the extent to which geographical knowledge can be catered for within the decision-making process of corporate information systems. Their findings revealed that although there is a positive trend in firms utilising geographical methods for decision-making, the methods are in many cases restricted to technical and operational planning teams with minimal awareness on an executive level (Reynolds & Wood, 2010). The research supports this finding. Of all the

participants interviewed, two participants mentioned that their organisation has operational planning teams dedicated to location analytics and decision support at a technical level, with minimal awareness on an executive level. The findings also show that many firms do not have teams dedicated to location planning.

Casadesus-Masanell and Ricart (2010) note that there needs to be integration between strategy, chosen business models, and the tactics employed to reach a certain long-term goal. The research findings reveal that in order to reach an organisational goal, alignment between internal or external decision support and business models and strategy is important. Respondents from the majority of firms interviewed commented that their organisation has outsourced location analysis to external consultants. Based on the results, challenges, such as external consultants not understanding the firm's business model, were shared. Participants from FMCG and QSR retailers differed in their opinion regarding the perceived value that consultants add to location decision-making. Similar to firm capabilities in FMCG retailers which tend to rely on internal teams for decision-making, participants from these firms were not convinced that external consultants add value to their strategic decision-making. One interviewee noted that the decision to build in-house capabilities was 'revolutionary' for their organisation. Participants from QSR retailers expressed a different view, stating that external consultants were more objective and experienced in providing location decision support. Another challenge mentioned by the majority of participants was the cost of utilising consultants.

Technology is emerging as an enabler for firms to differentiate in business environments that are becoming more competitive. As one of the largest and most diversified operations in the world, retailers are concerned with strategies, such as location choice, store formats, product selection and pricing (Kumar et al., 2017). The research results reveal that most notably, the larger firms and those with established brands are adopting, or intend to adopt, location intelligence technology as an in-house capability to support strategic decision-making. According to Casadesus-Masanell and Ricart (2010), this technological adoption is fundamentally changing firm competitiveness. In order to sustain competitive advantage, firms have had to learn to adapt and change their business models (Casadesus-Masanell & Ricart, 2010). The findings show that smaller retail firms are less likely to adapt and change their business models.

6.4.3 Application to the Retail Decision Model

The research has found that the adoption of location intelligence and firm capabilities has been driven to a large extent by external macroenvironmental factors such as changes in the market and retail complexity as well as meso factors such as consumer behaviour and societal trends. These trends, together with the trend of location analytics and intelligence methods, combined with decision-making concepts and principles, is becoming more relevant for business (Pick et al., 2017).

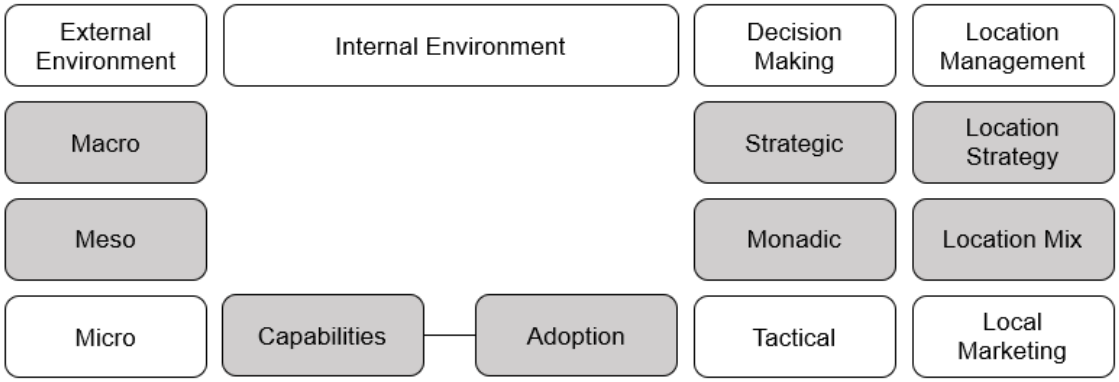

Figure 13: Research Question 3 and Retail Decision Model

The results have also revealed that changes in retail complexity and consumer behaviour are impacting both monadic and strategic decision-making which, due to the interconnectivity of the retail decision model, subsequently impact the location strategy and location mix.

6.5 Concluding Findings

Location Theory and New Economic Geography Theory offers a theoretical baseline for decision-makers to ask important “where” questions that impact business performance and inform strategic decision-making. As consumer behaviour changes together with technological advancements, however, location decision-making is undergoing a transformation. Anderson et al., (2003), already showed that geography mattered, even though there is an uptake in e-commerce. The research results and literature point to an evolution in the internal environment of retail decision-making which is being driven by retail executives’ perceptions of the external environment.

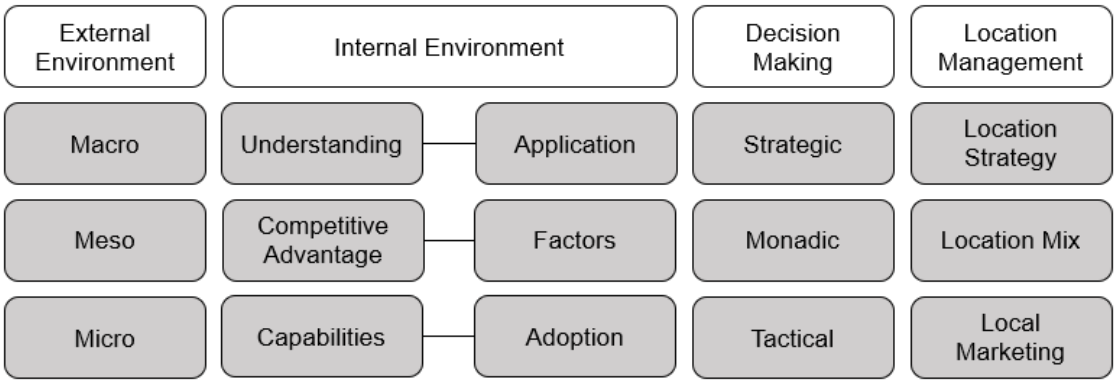

Figure 14: Retail Decision Model and Conclusive Findings

The adoption of location intelligence in strategic decision-making has been explored in terms of the perceptions of executives regarding the understanding of location intelligence and its role in the internal organisational environment as well as internal and external factors influencing the adoption thereof.

The concluding findings have been mapped against the retail planning and decision model (Figure 15) developed by Hernández and Bennison (2000), wherein the themes from each of the three research questions reflect under the internal environment which builds on the concepts of firm structure and decision-making culture.

According to Hernández and Bennison (2000), location mix (store roll-out, relocation and rationalisation) is a monadic decision and influenced by the microenvironment. The microenvironment is, however, nestled with the macroenvironment, where macroeconomic conditions influence decision-making downstream (Hernandez et al., 1998). The results show that there is indeed a relationship between the external and internal environments and that understanding location decision-making is becoming more important for strategic decision-making and competitive advantage.

The research has found that the adoption of location intelligence is being driven by the increasing levels of complexity facing retail executives who, while endeavouring to understand the external environment, also need to understand technological changes and how these affect retail models as well as structure and decision-making (internal environment). Because of technological advancements and changing consumer behaviour, the geographical location of a specific retail store (monadic decision-making) will be less important than the strategies employed to target

customers based on their location to attract them to the specific store (strategic decision-making) (Kumar et al., 2017). The research findings support the literature confirming that understanding the location of both customers and retail footprint, is key. The findings, however, also expand the literature as research results show that the understanding of location is becoming more strategic than tactical.

The research has found that even though technology and consumer behaviour is evolving, location still plays a central role in retail decision-making. The research contributes to Location Theory and New Economic Geography Theory as findings from the results show that location decision-making in retail is becoming more important from a strategic perspective. This finding contradicts theory about the 'death of distance' being advocated by some economists that location plays less of a central role due to changes in consumer behaviour driven by technology (Gorter & Nijkamp, 2001).

Chapter 7: Conclusion and Recommendations

7.1 Introduction

The adoption and implementation of location intelligence are undergoing considerable growth internationally with market research agencies estimating an annual double-digit growth from now until 2025 (Grand View Research, 2018). South Africa, however, ranks low in terms of user adoption scores (Geospatial Media and Communications, 2018). The research thus sought to initially gain an understanding of the nature of location intelligence and application thereof in the South African context. The research thereafter sought to understand retail executives' mindsets and perceptions about the role of location intelligence for competitive advantage and understand to what extent they are influencing the adoption of location intelligence for strategic decision-making.

As strategic interaction and location choices of firms have been largely overlooked in the literature (Alcacer et al., 2015), the research sought to explore the theory behind location intelligence and retail location decision models together with factors influencing location choices. Due to new forces, such as changing customer behaviour, innovation and new technological advancements, retailers are having to embrace change to remain competitive. The exploration of these new technological advancements such as location intelligence is worthy of continued research (Grewal et al., 2017).

In the context of a changing retail environment and evolving consumer behaviours, the research ultimately sought to gain an understanding of retail executives' perceptions of location intelligence and the factors influencing decision-making through the lens of location and decision-making theory. After interviewing twelve executives from various retail formats and sizes, the results were analysed and themes were mapped against the Retail Location Planning and Decision Model (Hernández & Bennison, 2000). This process allowed the researcher to gain an understanding into the internal and external environmental factors influencing the adoption of location intelligence as well as gain insight into the levels of complexity facing retail decision-makers in a world of changing customer behaviour.

7.2 Principal Findings

The common thread between literature, research results and findings for each research question will be discussed in the sections to follow. The theoretical framework serves as the baseline on which the research results and themes were mapped.

Internationally, location intelligence is levelling the playing field between large established retailers and start-ups with executives leveraging both accurate location data and retail experience for decision-making. Is this the case in South Africa? This research aimed to address this question by exploring this gap between literature and retail executives' perceptions and mindsets about the adoption of location intelligence for strategic decision-making.

7.2.1 Location Theory

Location Theory is concerned with the question of where economic activity can be found (Gorter & Nijkamp, 2001). Being concerned with understanding both the micro and macro aspects of decision-making, Location Theory is still positioned as a global field force. But, due to advancements in both technology and consumer behaviour, the relevance of location and Location Theory is being questioned by economists and that much work is required to investigate the advantages and disadvantages of this evolutionary change (Gorter & Nijkamp, 2001).

This research has contributed to understanding the evolutionary change through understanding the role of location intelligence in strategic decision-making in retail from both a macro and micro level. Location Theory has, in the past, been primarily focused on the location of economic activity. Location factors have been understood from the perspective of agglomeration and clustering as postulated by the New Economic Geography Theory.

This research supports these theories from a retail store location perspective as interview participants still believe location to be critical to the success of their brick and mortar stores. However, due to macro factors such as evolutionary changes in consumer behaviour driven by technology, this research contributes to Location Theory in that an additional dimension, the consumer location dimension, should be considered when making strategic location decisions.

Gaining an understanding into individual consumer location activity offers retail firms the ability to locate a store where it will attract customers whose needs match the firms brand concept (Lee & Kim, 2018). For customers, location matters as it offers a more convenient experience (Lee & Kim, 2018).

7.2.2 Retail Decision-Making Theory

Retail Decision-Making Theory suggests that retail location choices involve both soft (the art of experience) and hard (the science of analytics) processes (Reynolds & Wood, 2010). Location intelligence is a science that supports decision-making. The research has explored external factors which are contributing toward the adoption of location intelligence in retail organisations as well as internal mindsets about the role of location intelligence of strategic decision-making. Findings from interviews have enabled the researcher to build frameworks per theme which have been mapped against the internal and external environment of the retail decision model developed by Hernández and Bennison (2000). The following sub-sections will reveal how this research has contributed to retail decision-making theory. These have been grouped by themes that have evolved from the three research questions. The contribution to retail decision-making theory culminates in section 7.2.2.4 whereby all themes have been mapped against the retail decision model.

7.2.2.1 Understanding and Application of Location Intelligence

Two themes, namely ‘understanding’ and ‘application’ were developed from codes and constructs for Research Question 1. The research has found that the understanding of location intelligence was based on participants retail context and executives’ mindsets about the role of location for decision-making. Furthermore, the research has found that location intelligence is a relatively new concept to the majority of participants interviewed. Although many participants have to a large extent been exposed to aspects of location intelligence such as site mapping and feasibility studies, these aspects are all focused on the operational and tactical level of decision-making. Location intelligence, however, focuses on the systematic interconnectivity of everything through harnessing spatial analytics tools and techniques, infrastructure, processes and sharing of spatial data and applications for decision-making (Forbes, 2015; Gartner, 2019). Based on this definition, the research has found that from the researched sample, the application of location intelligence is still in its infancy in the South African retail sector.

For many participants, the understanding and application of location intelligence were understood from an internal organisational perspective. Findings show that location decision-making within retail firms is to a large extent driven by experienced executives who have 'been in the game' for many years and have a good gut feel as to where stores should be located. The application of location intelligence and analysis is thus being applied in this context where executives look at location data, maps and spatial applications as a means to justify their gut feel decision-making. Research findings reveal that mindsets toward the application of location intelligence are changing, however, due to external environmental pressures to change and adopt new ways of outcompeting the competition.

7.2.2.2 Location intelligence and Competitive Advantage

The selection of a retail store location is an important strategic decision as it offers retailers a unique competitive advantage (Yildiz & Tüysüz, 2018). Themes developed from research questions and participants responses were based on executives' perceptions about the role of location intelligence of competitive advantage. The findings show that participants view the role of location intelligence from the context of their firm's retail model. The interview sample set included executives from FMCG, QSR, restaurant and e-commerce models. Based on these retail models, the findings show a varying level of the extent to which location plays a role for competitive advantage. For FMCG models, results show that location decision-making is becoming critical for gaining competitive advantage whereas location is less of a factor for completive advantage for smaller restaurant brands with a smaller footprint. Large FMCG retailers invest a great deal of capital in store development and location decisions involve a long-term commitment which may be the reason why FMCG retailers are becoming more reliant on location intelligence for decision support (Yildiz & Tüysüz, 2018). The findings show that smaller retailers target a specific market and decision-makers tend to follow their gut when selecting a site.

The research has furthermore revealed that of the majority of firms interviewed, the location was applied as a tactical tool to the business model as a means to gain competitive advantage. Location decision-making took place after the retail model was chosen whereas the theory is revealing that to be strategic, a firm needs to incorporate location considerations when designing a business model.

As many of the participants' firms have a large brick and mortar footprint in South Africa, the research has found that mindsets of participants were geared toward understanding location from a retail site perspective. This understanding was primarily driven by internal financial, cultural and decision making factors such as executives experience and gut feel. Both the literature (Grewal et al., 2017; Kumar et al., 2017; Reynolds & Wood, 2010) and research findings are, however, showing that external factors such as technological advancements and changing consumer behaviour are causing a shift in decision-makers mindsets about the role of location intelligence for strategic advantage. The findings show that no longer is store location the most important consideration but due to digital technology changing customer behaviour, understanding customer location has become equally important for retail decision-making and competitive advantage. This finding contributes to the retail decision model whereby factors for decision-making need to include customer location insights for retail model strategy.

7.2.2.3 Location Intelligence and Strategic Decision-Making

Understanding the adoption of location intelligence and firm capabilities (Teece, 2010) to analyse location data for decision-making were two themes that evolved from Research Question 3 constructs.

Findings show that in the past location decisions were made based on a retailer's business model and an understanding of factors such as demographics, vehicle and foot traffic as well as household income levels to decide on where to locate a store or outlet. Due to technological changes and consumer trends for a more convenient retail experience, the research findings have revealed that retailers are now having to consider and understand digital traffic and customer location insights for decision-making. This phenomenon is including an additional level of complexity in retail strategy which is driving the need to adopt technologies such as location intelligence.

Due to the financial implication of location decisions, the research has found that the larger FMCG retailers and QSR's with a large store footprint are adopting location technology more rapidly than smaller restaurants and QSRs. The findings show that as retailers grow their retail footprint to a point of saturation where location decisions become more challenging, only then do they turn to location intelligence as a means to aid decision-making. Furthermore, findings show that the majority of retailers are

utilising consultants for location decision support even though they believe that consultants have a lack of understanding of their business model. This factor has led to larger FMCG retailers building internal location decision support capacity.

Research findings show that in the past, location decision-making has predominantly been driven by a downstream site-specific tactical requirement. Because of external factors such as technological change, market complexity and economic instability, location decision-making has become a key topic in executive boardrooms which is beginning to influence the adoption thereof in strategic decision-making.

7.2.2.4 Retail Decision Model

Based on the findings, the research has contributed to the retail decision model developed by Hernández and Bennison (2000) by mapping research question themes to the decision-making process (strategic, monadic and tactical). These have been discussed in Chaper 6 under each research question.

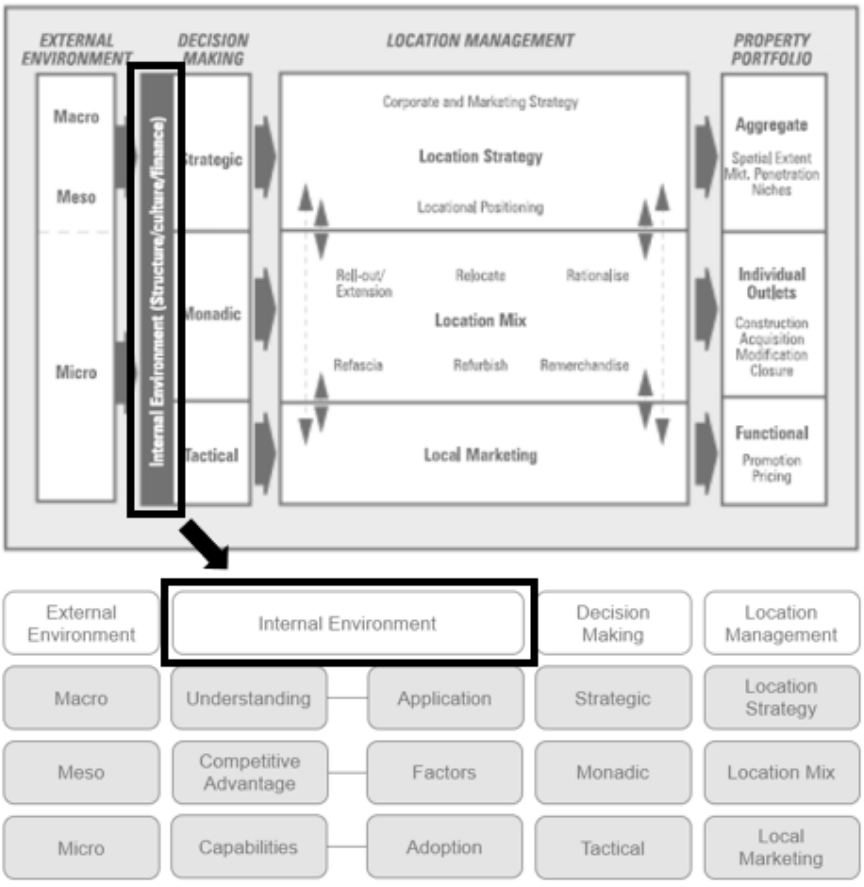

Figure 15: Contribution toward the retail location planning and decision model (Hernández & Bennison, 2000, p.359)

Figure 15 shows how themes have been mapped against the retail decision model (Hernández & Bennison, 2000) and how findings from this research have contributed to the role of location intelligence for strategic decision-making in retail. We know now that perceptions about the role of location for strategic decision-making in retail are changing. In the past, decisions were primarily based on tactical and monadic choices for individual store sites. Now, due to technological change, the emergence of understanding customer behaviours and locations, retail decision-making complexity is being elevated to a point where executives can no longer rely on experience and gut feel to make important strategic decisions. Executives are beginning to realise the value of location intelligence as a tool to inform business models and location strategy.

7.3 Recommendation for Executives

The research findings have shown that although critically important for strategic decision-making and competitive advantage, location intelligence is a relatively unknown term. The interview data and findings attest to low levels of adoption of location intelligence in both internal firm capabilities as well as external location decision-support.

Based on the research contributions to both location and retail decision theory, it is recommended that managers apply these contributions to review their organisational business model from the location perspective. This means that:

i. Managers should endeavour to gain a deeper understanding of the role of location intelligence from both a store location and customer location perspective. For many managers, this would require a change in mindset from store-centric to customer-centric (Bradlow et al., 2017).
ii. Managers need to become aware of the location data sources other than demographics and income level data. The shift toward digital footprint of consumer behaviour is beginning to disrupt and drive new innovations in retail. Understanding these location insights may enable competitive advantage and sustainable business models into the future.
iii. By promoting and increasing internal location data analytics capacity and capabilities (Sorescu et al., 2011), managers will benefit through deeper

insights into the sustainability of their business model as well as identify focus areas for competitive advantage.

iv. Most importantly, managers can no longer rely solely on gut feel and experience of location decision-making. The retail environment and complexity of both internal and external as well as macro and micro factors affecting retail and consumer choice are evolving at a rapid rate (Grewal et al., 2017). Location intelligence is becoming a key part of business workflow and strategic decision-making within international retail organisations who are trying to deal with this complexity. Managers for local retail firms need to embrace change and adopt location intelligence as a means to outcompete rivals.

7.4 Recommendations for Future Research

There is very little research into the application of location intelligence for strategic advantage. There is also limited theory on the concept of location intelligence. The following recommendations for future research would add immense value to the field of location theory and adoption of location intelligence:

i. Although the sample size was small, it seemed as though the older retail executives are less inclined to adopt location intelligence for decision-making. Furthermore, it seemed that they remain reliant on gut feel and experience. Younger executives, however, differed in their opinion and were more open to exploring location intelligence as a means to drive competitive advantage. It is, therefore, recommended that future research explore generational differences, mindsets and perceptions of the value and adoption of location intelligence adoption retail decision-making.

ii. The research sample was restricted to the Gauteng province. As many retailers are spread throughout the South African region, it is recommended that future research incorporates findings from other areas.

iii. Understanding the adoption of location intelligence in the broader retail industry as well as in other industries such as financial, automotive and real estate and manufacturing are areas that require further research.

7.5 Research Limitations

i. Due to the nature of the research being focused on the retail sector, interviews took place at the participants' place of work which in many cases was a restaurant, mall or open space environment. This created challenges regarding the recording of interviews due to noise levels and may have impacted the quality of data collected.
ii. Only a limited number of executives from the retail sector who were based in Johannesburg, South Africa were interviewed which may have biased responses from a geographical perspective.
iii. The research was limited to interviews of executives which exclude perceptions of lower-level manager and operational decision-makers.
iv. Because of executive's lack of available time and busy schedules, interviews were limited to 30 minutes which limited the amount of data captured.

7.6 Conclusion

The literature shows that location intelligence is becoming a key enabler for strategic decision-making in international retail firms seeking competitive advantage. Despite this, the research has found that this is not the case in the South African retail environment. There is little evidence that location intelligence is being adopted as a means to support strategic retail decision-making. The findings from interviews of the 12 executives show that the role of location intelligence is understood from a low level operational and tactical view and not core to the firms' retail model and strategy.

In conclusion, the study has found that although retail executives believe that location factors are key to their organisation's success, these executives are unaware of the benefits of location intelligence for strategic decision-making.

Finally, this study contributes to literature through the development of location-centric frameworks pertaining to macro, meso and micro factors impacting location and retail decision theory and the application thereof for decision-making.

8. Reference List

Alcacer, J., Dezso, C., & Zhao, M. (2015). Location Choices Under Strategic Interactions. *Strategic Management Journal*, *37*(1), 116–132. https://doi.org/10.1002/smj.2214

Anderson, W. P., Chatterjee, L., & Lakshmanan, T. R. (2003). *E-commerce, Transportation, and Economic Geography*. *34*(4), 415–432. https://doi.org/10.1046/j.0017-4815.2003.00228.x

Bradlow, E. T., Gangwar, M., Kopalle, P., & Voleti, S. (2017). The Role of Big Data and Predictive Analytics in Retailing. *Journal of Retailing*, *93*(1), 79–95. https://doi.org/10.1016/j.jretai.2016.12.004

Carto. (2018). *State of Location Intelligence*. Retrieved from https://carto.com/state-of-location-intelligence-2018/

Casadesus-Masanell, R., & Ricart, J. E. (2010). From strategy to business models and onto tactics. *Long Range Planning*, *43*(2–3), 195–215. https://doi.org/10.1016/j.lrp.2010.01.004

Clancy, H. (2014, November 21). This software entrepreneur wants executives to think like cartographers. Retrieved from: http://fortune.com/2014/11/21/connected-jack-dangermond-esri/

Columbus, L (2018, February 11). What's new in Location Intelligence For 2018. Retrieved from https://www.forbes.com/sites/louiscolumbus/2018/02/11/what-new-in-location-intelligence-for-2018/#7a5f725b14b5

Dangermond, J. (2019, February 14). Maps are becoming a common languate across organizations - Jack Dangermond, Esri. Retrieved from: https://www.geospatialworld.net/article/maps-are-becoming-a-common-language-across-organizations-jack-dangermond-esri/

Evelson, B (2008, November 21). Topic Overview: Business Intelligence. Retrieved from https://www.forrester.com/report/Topic+Overview+Business+Intelligence/-/E-RES39218#

Forbes. (2015). *The Eureka Moment: Location Intelligence and Competitive Insight*.. Retrieved from: https://www.forbes.com/forbesinsights/location_intelligence/index.html

Gartner. (2019). *Analytics and Business Inteligence (ABI)*. Retrieved from https://www.gartner.com/en/information-technology/glossary/business-intelligence-bi

Geospatial Media and Communications. (2018). *2018 Edition Geospatial Industry Outlook & Readiness Index*.Retrieved from: https://geobuiz.com/geobuiz-2018-report.html

Grand View Research. (2018). Location Intelligence Market Report. Retrieved from: https://www.grandviewresearch.com/press-release/global-location-intelligence-market

Goldstuck, A. (2018). *Online Retail in South Africa 2019 Edition*. (2019), 1–174.

Gorter, C., & Nijkamp, P. (2001). Location Theory. *International Encyclopedia of the Social & Behavioral Sciences*, 9013–9019.

Grand View Research. (2018). Location Intelligence Market Report. Retrieved from: https://www.grandviewresearch.com/press-release/global-location-intelligence-market

Grewal, D., Roggeveen, A. L., & Nordfält, J. (2017). The Future of Retailing. *Journal of Retailing*, *93*(1), 1–6. https://doi.org/10.1016/j.jretai.2016.12.008

Harrison, E. F. (1996). A process perspective on strategic decision making Environmental assessment. *Management Decision*, *34*(1), 46–53. https://doi.org/10.1108/00251749610106972

Hernández, T., & Bennison, D. (2000). The art and science of retail location decisions. *International Journal of Retail & Distribution Management*, *28*(8), 357–367. https://doi.org/10.1108/09590550010337391

Hernandez, T., Bennison, D., & Cornelius, S. (1998). The organisational context of retail locational planning. *GeoJournal*, *45*(4), 299–308. https://doi.org/10.1023/A:1006989131869

Herschel, G., Linden, A., Sallam, R. L., Sicular, S., Hare, J., Heizenberg, J., … Laney, D. (2018). *Predicts 2018 : Analytics and BI Strategy*. Retrieved from https://www.gartner.com/document/3869863?ref=solrResearch&refval=202998178&qid=a23fd479cecc84f8919c5a

Horan, T (2018, February 27). The next MBA you hire should know GIS. Retrieved from https://www.esri.com/about/newsroom/publications/wherenext/grooming-spatial-business-transformers/

Jourdan, Z., Rainer, R. K., & Marshall, T. E. (2008). Business Intelligence: An Analysis of the Literature. *Information Systems Management*, 121–131. https://doi.org/10.1080/10580530801941512

Katz, L. (2019, April 28). Retailers are tracking where you shop – and where you sleep. Retrieved from https://m.fin24.com/Companies/Retail/retailers-are-tracking-where-you-shop-and-where-you-sleep-20190427

Koehn, N.F (2005). *Howard Schultz and Starbucks Coffee Company Prologue : International Expansion*. , Harvard Business School 1–40 (2005).

Krugman, P. (1998). What's new about the new economic geography? Oxford Review of. *Economic Policy*, *14*(2), 7-17.

Kumar, V., Anand, A., & Song, H. (2017). Future of Retailer Profitability : An Organizing Framework. *Journal of Retailing*, *93*(1), 96–119. https://doi.org/10.1016/j.jretai.2016.11.003

Kwakkel, J. H., Carley, S., Chase, J., & Cunningham, S. W. (2014). Technological Forecasting & Social Change Visualizing geo-spatial data in science, technology and innovation. *Technological Forecasting & Social Change*, *81*, 67–81. https://doi.org/10.1016/j.techfore.2012.09.007

Larson, D., & Chang, V. (2016). A review and future direction of agile, business intelligence, analytics and data science. *International Journal of Information Management*, *36*(5), 700–710. https://doi.org/10.1016/j.ijinfomgt.2016.04.013

Lee, J., & Kim, Y. (2018). “A Newcomer” versus “First Mover”: Retail Location Strategy for Differentiation. *Professional Geographer*, *70*(1), 22–33. https://doi.org/10.1080/00330124.2017.1310621

Matthew, B., Miles, M., & Hubermann, M. (1994). *Qualitative data analysis*. (2nd ed.) London, United Kingdom. SAGE Publications.

Okanga, B., & Groenewald, D. (2015). Effectiveness and efficiency of the delivery systems of the e-retail enterprises in South Africa. *Journal of Contemporary Management, 12*, 838–861. https://hdl.handle.net/10520/EJC179244

Pick, J. B., Turetken, O., Deokar, A., & Sarkar, A. (2017). Location Analytics and Decision Support : Reflections on Recent Advancements, a Research Framework and the Path Ahead. *Decision Support Systems*, *99*, 1–8. https://doi.org/10.1016/j.dss.2017.05.016

Porter M.C. (2000). Location, Competition, and Economic Development: Local Clusters in a Global Economy. *Economic Development Quarterly*, *14*(1), 15–34. https://doi.org/10.1177/089124240001400105

Ramadani, V., Zendeli, D., Gerguri-Rashiti, S., & Dana, L. P. (2018). Impact of geomarketing and location determinants on business development and decision making. *Competitiveness Review*, *28*(1), 98–120. https://doi.org/10.1108/CR-12-2016-0081

Reeves, M., Haanaes, K., & Sinha, JK (2015). Your strategy needs a strategy: how to choose and execute the right approach. USA, Boston: Harvard Business School Publishing.

Reynolds, J., & Wood, S. (2010). Location decision making in retail firms: Evolution and challenge. *International Journal of Retail and Distribution Management*, *38*(11), 828–845. https://doi.org/10.1108/09590551011085939

Said, A., & Torra V,. (2019) *Data science in practice: studies in big data*. (1st Ed). Switzerland. Springer International Publishing.

Sankary, G. (2018, September 18). The Secret Formula behind One of the World's Biggest Business Exmansions. Retrieved from: https://www.esri.com/about/newsroom/publications/wherenext/the-secret-formula-behind-one-of-the-worlds-biggest-business-expansions/

Saunders, M., & Lewis, P. (2012). Doing research in business and management: An essential guide to planning your project. England: Pearson Education Limited.

Shah, S., Horne, A., & Capellá, J. (2012). Good data won't guarantee good decisions. *Harvard Business Review*, *90*(4), 23–26.

Shivakumar, R. (2014). How to tell which decisions are strategic. *California Management Review*, *56*(3), 78–97. https://doi.org/10.1525/cmr.2014.56.3.78

Sorescu, A., Frambach, R. T., Singh, J., Rangaswamy, A., & Bridges, C. (2011). Innovations in retail business models. *Journal of Retailing*, *87*(SUPPL. 1), S3–S16. https://doi.org/10.1016/j.jretai.2011.04.005

Teece, D. J. (2010). Business Models, Business Strategy and Innovation. *Long Range Planning*, *43*(2–3), 172–194. https://doi.org/10.1016/j.lrp.2009.07.003

Vallaster, C., Maon, F., Lindgreen, A., & Vanhamme, J. (2019). Serving Multiple Masters: The role of micro-foundations of dynamic capabilities in addressing tensions in for-profit hybrid organizations. *Organization Studies*. https://doi.org/10.1177/0170840619856034

World Bank. (2009). Reshaping Economic Geography. In *World Development Report* (Vol. 91).

Yildiz, N., & Tüysüz, F. (2018). A hybrid multi-criteria decision making approach for strategic retail location investment: Application to Turkish food retailing. *Socio-Economic Planning Sciences*. https://doi.org/10.1016/j.seps.2018.02.006

Zikmund, W., Babin, B., Carr, J., & Griffin, M (2013). Business research methods. USA, South-Western: Cengage Learning.

9. Appendices

Appendix 1: Invitation to Participate in Research Study

Dear XXXXXX,

Thank you for your time on the phone.

As discussed, I'm doing my MBA research in strategic decision making and location intelligence.

I would greatly value 30 - 45min of your time to interview you on this topic. The interview format is informal (conversational) and the aim is to understand if South African retail executives are aware of location intelligence and how they perceive the value of location intelligence for strategic decision making.

Are you willing to participate in my research and meet me for an interview at your office next month?

I look forward to your feedback.

Many thanks

Best Regards
Roger Blewett
GIBS MBA student
083 298 6926
29102759@mygibs.co.za

Appendix 2: Consent Form

Interview Consent Form

The adoption of location intelligence in strategic decision-making within the retail industry

Researcher: Roger Blewett, MBA Student at the Gordon Institute of Business Science, University of Pretoria

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA.

I am conducting research on the adoption of location intelligence in strategic decision-making and am trying to investigate whether executives in the retail sector are aware of location intelligence and if so, to what extent location intelligence forms part of strategic decision-making.

Our interview is expected to last about an hour and will help us understand how South African executives perceive the value of location intelligence for strategic decision-making. Your participation is voluntary, and you can withdraw at any time without penalty. Interviews will be audio recorded. All data will be reported without identifiers. If you have any concerns, please contact my supervisor or me. Our details are provided below:

Roger Blewett (Researcher)	Dr. Charlene Lew (Supervisor)
29102759@mygibs.co.za	lewc@gibs.co.za
083 298 6926	011 771 4284

Signature of participant: _____

Date: _____

Signature of researcher: _____

Date: _____

Appendix 3: Interview Questionnaire

Interview Questionnaire

Name: Start Time:

Organisation: End Time:

Job Title:

Date:

Thank you for taking the time to meet me today. Your particicpation in this research is much appreciated.

The title of this research is “The adoption of location intelligence in strategic decision-making within the retail industry”. Location intelligence is becoming a pertinent topic within established international retail brands seeking competitive advantage. Location intelligence is essentially an umbrella term that encompasses applications, tools, infrastructure and practices that are geared toward the analysis and sharing of spatial or location data and services for decision-making. The research aims to understand whether retail executives perceive the adoption of location intelligence to be as relevant and beneficial for strategic decision-making in the local retail landscape as it is for retail brands in developed markets.

The objective of this research is:

- To gain insights into the underlying theory and practice of location intelligence
- To understand whether South African retail business decision-makers are aware of the benefits of location intelligence
- To understand if retail decision-makers perceive location intelligence to be valuable for their organisational strategy

I would like to encourage you the speak freely as the nature of this interview is both exploratory and conversational. All information shared will remain confidential.

May you please sign the consent form in order for us to commence with the interview?

Question 1:

What is your understanding of the term location intelligence?

Question 2:

To what extent have you been exposed to location intelligence?

Question 3:

Do you think location intelligence offers retail organisations a level of advantage over other industry players?

Why and How (interviewees organisation)?

Question 4:

How do decision-makers decide on a new site when expanding operations or targeting new customers?

Gut feel or by using location analytics methods or both?

Is an in-house team or consultants used for the analysis?

Question 5:

Is location intelligence discussed during executive strategic planning sessions?

To what extent does senior management play a role regarding the adoption of location intelligence in the organisation?

Question 6:

Do you think location intelligence is relevant to e-retail strategy?

Why and how?

Appendix 4: Ethical Clearance Letter

Gordon Institute of Business Science
University of Pretoria

20 June 2019

Roger Blewett

Dear Roger

Please be advised that your application for Ethical Clearance has been approved.

You are therefore allowed to continue collecting your data.

Please note that approval is granted based on the methodology and research instruments provided in the application. If there is any deviation change or addition to the research method or tools, a supplementary application for approval must be obtained

We wish you everything of the best for the rest of the project.

Kind Regards

GIBS MBA Research Ethical Clearance Committee

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Appendix 5: Research Themes, Constructs and Codes

Themes and Constructs

Understanding the Concept of Location Intelligence	No. of Codes
Decision making model, process or application	17
Levels of engagement and exposure	8
Location terminology differs and is often new to respondents	6

Extent to which Location Intelligence is Applied in Retail Organisations	No. of Codes
Past experience in location analysis and strategy	11
Data relating to location and analysis	11
Location data and maps providing insights	5

The Role of Location for Competitive Advantage in Retail Business Models	No. of Codes
Location considerations for retail business models and customer engagement	27
Cost perceptions and firm decision making for competitive advantage	24
The need for location intelligence based on retail model	9
The advantage of Location Intelligence in retail	9
Foresight as a means to gain advantage	6
Lack of data and consumer information	3

Factors Influencing Location Decision-Making	No. of Codes
Factors influencing the decision making process	32
Factors influencing e-retail and location decisions	31
Operational processes and considerations for decision making	25
Data and location considerations for e-retail strategy	18
Gut feel and decision making	18
Clusters and activity nodes in urban and rural locations	16
Data availability and challenges for decision making	15
Various alternative methods for site selection	13
Analytics, big data and machine learning	11

The Evolution of Retail Complexity Driving Adoption	No. of Codes
Levels of adoption based on executive buy in and understanding	26
Understanding complexity and challenges facing retail organisations	21
Levels of engagement and discussion about location intelligence	12
Location factors influencing discussions	8

Considerations for Insourcing or Outsourcing Location Decision-Making	No. of Codes
Internal firm capabilities and experience	16
The role of consultants and networks in retail	16
Challenges with utilising external parties	6

Codes

Code	Code Groups
IQ1 - Best location for profit	Interview Question 1
IQ1 - Decision making model or tool	Interview Question 1
IQ1 - Demographics	Interview Question 1
IQ1 - Dependent of retail type	Interview Question 1
IQ1 - Insights for decision making	Interview Question 1
IQ1 - Location data for marketing	Interview Question 1
IQ1 - LSM and SEM	Interview Question 1
IQ1 - Qual and Quant for decision making	Interview Question 1
IQ1 - Scientific data	Interview Question 1
IQ1 - Terms used	Interview Question 1
IQ1 - Understanding customer locations	Interview Question 1
IQ1 - Understanding for retail model	Interview Question 1
IQ1 - Understanding of LI	Interview Question 1
IQ1 - Unknown term	Interview Question 1
IQ2 - Ecommerce and LI	Interview Question 2
IQ2 - Evolution on location analysis	Interview Question 2
IQ2 - Finding best locations	Interview Question 2
IQ2 - Geography in university	Interview Question 2
IQ2 - Geospatial environment	Interview Question 2
IQ2 - Interest in learning about LI	Interview Question 2
IQ2 - Level of engagement	Interview Question 2
IQ2 - LI tech exposure	Interview Question 2
IQ2 - Location strategy	Interview Question 2
IQ2 - Maps and Insights	Interview Question 2
IQ2 - Past experience	Interview Question 2
IQ2 - Products by location	Interview Question 2
IQ3 - All firms have the same need	Interview Question 3
IQ3 - Competitive advantage	Interview Question 3
IQ3 - Consequences of bad decisions and foresight	Interview Question 3
IQ3 - Data quality	Interview Question 3
IQ3 - Demand and penetration	Interview Question 3
IQ3 - Foresight and investment	Interview Question 3
IQ3 - Foresight tool for advantage	Interview Question 3
IQ3 - Lack of consumer information	Interview Question 3
IQ3 - Level of Importance	Interview Question 3
IQ3 - Market planning importance	Interview Question 3
IQ3 - Retail environment and advantage of LI	Interview Question 3

IQ3 - Smaller firms less reliant on LI	Interview Question 3
IQ3 - Understanding data for foresight	Interview Question 3
IQ4a - Accessibility	Interview Question 4a
IQ4a - Advertising decisions	Interview Question 4a
IQ4a - Anchors	Interview Question 4a
IQ4a - Art and Science	Interview Question 4a
IQ4a - Cannibalisation	Interview Question 4a
IQ4a - Cluster and market share	Interview Question 4a
IQ4a - Cluster and store format	Interview Question 4a
IQ4a - Cluster by customer	Interview Question 4a
IQ4a - Cluster by LSM	Interview Question 4a
IQ4a - Comparisons by area type	Interview Question 4a
IQ4a - Constant change	Interview Question 4a
IQ4a - Convenience	Interview Question 4a
IQ4a - Cross border risk	Interview Question 4a
IQ4a - Customer data for decision making	Interview Question 4a
IQ4a - Customer knowledge	Interview Question 4a
IQ4a - Customer surveys	Interview Question 4a
IQ4a - Data challenges and decision making	Interview Question 4a
IQ4a - Day and time context	Interview Question 4a
IQ4a - Decision making for product, price and promotions	Interview Question 4a
IQ4a - Disruption and convenience	Interview Question 4a
IQ4a - Drive time and traffic patterns	Interview Question 4a
IQ4a - Expense potential	Interview Question 4a
IQ4a - Financial factors	Interview Question 4a
IQ4a - Franchisee and location	Interview Question 4a
IQ4a - Importance of activity nodes	Interview Question 4a
IQ4a - Impossible to identify all sites	Interview Question 4a
IQ4a - Increasing challenges in retail growth	Interview Question 4a
IQ4a - Interest in location data	Interview Question 4a
IQ4a - Macro analysis	Interview Question 4a
IQ4a - Mapping applications	Interview Question 4a
IQ4a - Market planning	Interview Question 4a
IQ4a - Market share and income potential	Interview Question 4a
IQ4a - Revenue potential and impact	Interview Question 4a
IQ4a - Shopping centre reports	Interview Question 4a
IQ4a - Store closure	Interview Question 4a
IQ4a - Store format by segment	Interview Question 4a
IQ4a - Team operations	Interview Question 4a
IQ4a - Tech challenges	Interview Question 4a
IQ4a - Time finding a location	Interview Question 4a
IQ4a - Tool for retail model	Interview Question 4a
IQ4a - Tourist income	Interview Question 4a
IQ4a - Urban vs Rural clusters	Interview Question 4a
IQ4a - Urban vs Rural context	Interview Question 4a
IQ4a - Various sources of information	Interview Question 4a
IQ4b - Age, gut feel and analytics	Interview Question 4b
IQ4b - Analysis rather than gut feel	Interview Question 4b
IQ4b - Analytics focus	Interview Question 4b

IQ4b - Big data and customer data	Interview Question 4b
IQ4b - Brand location vs customer location	Interview Question 4b
IQ4b - Combination	Interview Question 4b
IQ4b - Customer data	Interview Question 4b
IQ4b - Decision making factors	Interview Question 4b
IQ4b - Detailed research document	Interview Question 4b
IQ4b - Experience and retail model	Interview Question 4b
IQ4b - Group and individual store analysis	Interview Question 4b
IQ4b - Gut Feel	Interview Question 4b
IQ4b - Gut feel and bias	Interview Question 4b
IQ4b - Gut feel and failure	Interview Question 4b
IQ4b - Gut feel rather than analysis	Interview Question 4b
IQ4b - Impact factors	Interview Question 4b
IQ4b - International opportunities	Interview Question 4b
IQ4b - Location analysis benefits	Interview Question 4b
IQ4b - Machine learning tech	Interview Question 4b
IQ4b - Machine learning vs local knowledge	Interview Question 4b
IQ4b - Trade zones	Interview Question 4b
IQ4c - Area managers and landlord relationships	Interview Question 4c
IQ4c - Both internal and external	Interview Question 4c
IQ4c - Consultant issues	Interview Question 4c
IQ4c - Consultant local knowledge	Interview Question 4c
IQ4c - Consultant objective view	Interview Question 4c
IQ4c - Consultant shared value	Interview Question 4c
IQ4c - Consultant validation of market plans	Interview Question 4c
IQ4c - Consultants lack of understanding	Interview Question 4c
IQ4c - Cost of consultants	Interview Question 4c
IQ4c - Cross border consultant experience	Interview Question 4c
IQ4c - External consultant analysis	Interview Question 4c
IQ4c - Firm LI team	Interview Question 4c
IQ4c - Firm resources	Interview Question 4c
IQ4c - Firm roles and titles	Interview Question 4c
IQ4c - Firm team functions	Interview Question 4c
IQ4c - In house team issues	Interview Question 4c
IQ4c - In-house experience	Interview Question 4c
IQ4c - International trends	Interview Question 4c
IQ4c - Store Development Role	Interview Question 4c
IQ5a - Data granularity by market	Interview Question 5a
IQ5a - Exec decision making	Interview Question 5a
IQ5a - Exec dynamics and discussions	Interview Question 5a
IQ5a - Gap list	Interview Question 5a
IQ5a - Interrogation of reports	Interview Question 5a
IQ5a - KPI's and Strategy	Interview Question 5a
IQ5a - LI and brand position	Interview Question 5a
IQ5a - LI big topic	Interview Question 5a
IQ5a - Location and Competition	Interview Question 5a
IQ5a - Location data used frequently	Interview Question 5a
IQ5a - Market plan	Interview Question 5a
IQ5a - Not discussed	Interview Question 5a

IQ5a - Short discussion	Interview Question 5a
IQ5a - Trade area maps	Interview Question 5a
IQ5b - Exec management adoption	Interview Question 5b
IQ5b - Executive buy-in benefit	Interview Question 5b
IQ5b - Prediction	Interview Question 5b
IQ6 - Advertising decisions	Interview Question 6
IQ6 - Aggregators	Interview Question 6
IQ6 - Apps, price and convenience	Interview Question 6
IQ6 - Click and collect	Interview Question 6
IQ6 - Dark Kitchen concept	Interview Question 6
IQ6 - Data mining	Interview Question 6
IQ6 - Delivery tracking	Interview Question 6
IQ6 - Digital vs foot traffic investment	Interview Question 6
IQ6 - Ecommerce and LI	Interview Question 6
IQ6 - Ecommerce logistics focus	Interview Question 6
IQ6 - e-retail and business model	Interview Question 6
IQ6 - e-retail clusters	Interview Question 6
IQ6 - e-retail customer data	Interview Question 6
IQ6 - e-retail revenue share	Interview Question 6
IQ6 - Evolution of buying behaviour	Interview Question 6
IQ6 - Final mile performance	Interview Question 6
IQ6 - Generational differences	Interview Question 6
IQ6 - Implications of crime	Interview Question 6
IQ6 - Keep agile and innovate	Interview Question 6
IQ6 - LI more NB for Brick and Mortar	Interview Question 6
IQ6 - LI not only solution	Interview Question 6
IQ6 - LI relevant to distribution	Interview Question 6
IQ6 - Location and business opportunity	Interview Question 6
IQ6 - Location and resources	Interview Question 6
IQ6 - Location strategy impact and data	Interview Question 6
IQ6 - Mall trends	Interview Question 6
IQ6 - Market fulfilment challenge	Interview Question 6
IQ6 - Merchant and location	Interview Question 6
IQ6 - Perception of location	Interview Question 6
IQ6 - Performance	Interview Question 6
IQ6 - Site selection and delivery	Interview Question 6
IQ6 - Strategic importance	Interview Question 6
IQ6 - Trade area impact	Interview Question 6
RQ1 - Economic factors	Research Question 1
RQ1 - Evolution of customer awareness	Research Question 1
RQ1 - Foresight and luck	Research Question 1
RQ1 - Learn by doing	Research Question 1
RQ1 - Learn by failure	Research Question 1
RQ1 - LI problems	Research Question 1
RQ1 - Market planning	Research Question 1
RQ1 - Outlet and Customer mapping	Research Question 1
RQ1 - Policy and Admin	Research Question 1
RQ1 - Rapid Change	Research Question 1
RQ1 - Retail and community sustainability	Research Question 1

RQ1 - Sense of community	Research Question 1
RQ2 - Affordability	Research Question 2
RQ2 - brand loyalty vs alternatives	Research Question 2
RQ2 - Brick and mortar vs e-retail	Research Question 2
RQ2 - Commercial vs retail customer	Research Question 2
RQ2 - Community focus	Research Question 2
RQ2 - Consumer insights	Research Question 2
RQ2 - Context dependent	Research Question 2
RQ2 - Cost perceptions	Research Question 2
RQ2 - Data archives and trends	Research Question 2
RQ2 - Delivery, Take out, Sit down	Research Question 2
RQ2 - Design for location	Research Question 2
RQ2 - Developer research issues	Research Question 2
RQ2 - Economy and buying power	Research Question 2
RQ2 - Evolution of retail complexity	Research Question 2
RQ2 - Financial implications of decision making	Research Question 2
RQ2 - Hub and Spoke model	Research Question 2
RQ2 - Importance of location	Research Question 2
RQ2 - Innovation for competitive advantage	Research Question 2
RQ2 - LI critical for decision making	Research Question 2
RQ2 - LI for High density of stores in area	Research Question 2
RQ2 - Location and business model	Research Question 2
RQ2 - Location data and retail model	Research Question 2
RQ2 - Model and international opportunity	Research Question 2
RQ2 - Need for integrated LI systems	Research Question 2
RQ2 - New challenges in retail	Research Question 2
RQ2 - New digital decision making model	Research Question 2
RQ2 - Niche store model	Research Question 2
RQ2 - No desire for LI	Research Question 2
RQ2 - Not understanding community	Research Question 2
RQ2 - Product range by location	Research Question 2
RQ2 - Promotion by location	Research Question 2
RQ2 - Retail evolution and cost savings	Research Question 2
RQ2 - Retail models	Research Question 2
RQ2 - Standard property developer research	Research Question 2
RQ2 - Success factors	Research Question 2
RQ2 - Tight margins in QSR	Research Question 2
RQ2 - Transport nodes	Research Question 2
RQ2 - Understanding local complexity	Research Question 2
RQ3 - Adoption and foundation	Research Question 3
RQ3 - Interested but haven’t adopted	Research Question 3
RQ3 - Lack of adoption	Research Question 3
RQ3 - Understanding before adoption	Research Question 3
RQ3 - Understanding of ROI	Research Question 3