THE FINANCIAL AND NON-FINANCIAL FACTORS THAT INFLUENCE JSE-LISTED SOUTH AFRICAN RETAILERS' DECISION TO LEASE OR OWN THEIR CORPORATE REAL ESTATE, SPECIFICALLY WAREHOUSES AND DISTRIBUTION CENTRES

By

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Abstract

South African retailers are reliant on Corporate Real Estate not only to grow their footprint, and by implication revenue, but also to enable them to distribute their products to their network of stores. Previous studies have demonstrated that retailers prefer leasing their stores, but no research exists which investigated whether the same principles apply to distribution centres or warehouses which they occupy, specifically in South Africa.

This research, provide empirical insight into listed South African retailers' strategy with regards to distribution centres and/or warehouse acquisition methods as well as the financial and non-financial factors which influence their decision and how important these factors are. This study is limited to South African retailers listed on the Johannesburg Stock Exchange.

We did not find any noticeable trend exists which provides a framework for South African listed retailers when confronted with the lease-versus-buy decision regarding the acquisition of their Corporate Real Estate assets, specifically distribution centres and/or warehouses. We find that non-financial factors appear to be more important than financial factors when retailers are faced with a lease-versus-buy decision.

It is suggested that further research is required to quantify the degree of importance of non-financial factors in the lease-versus-buy decision of retailers.

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Abbreviations

CRE – Corporate Real Estate

DC – Distribution Centres

GDP – Gross Domestic Product

JSE – Johannesburg Stock Exchange

LVB – Lease-versus-buy

NPV – Net Present Value

STATSSA – Statistics South Africa

WACC – Weighted Average Cost of Capital

1. CHAPTER ONE: INTRODUCTION

1.1 Introduction

Retailers' sales growth is dependent on the expansion of their footprint; more stores potentially contribute to an increase in revenue (Basker, Klimek & Pham, 2008). Expanding retailers' footprint is done by way of opening new stores or enlarging existing stores. The consequence of the increase in a retailer's footprint is that the support-services needs to cater for such expansion. These support services include but is not limited to information technology (IT), supply chain/logistics, financial administration, human resources and call centres. These support services also depend on real estate to enable them to fulfil their function, albeit in an indirect way. The focus of this dissertation will be on the real estate requirements of the logistics support function of retailers. The real estate requirement of a logistic support function is limited to the industrial real estate sector.

Statistics South Africa defines a retailer as "*an enterprise deriving more than 50% of its turnover from sales of goods to the general public for household use*" and categorises them into seven broad categories: (1) general dealers, (2) retailers of food, beverages and tobacco in specialised stores; (3) retailers in pharmaceutical and medical goods, cosmetics and toiletries; (4) retailers in textiles, clothing, footwear and leather goods; (5) retailers in hardware, paint and glass; (6) all other retailers (STATSSA, 2013). Table 1.1 below illustrates the percentage contribution of retail trade sales is per category for the 2019 calendar year.

Retail Category:	**2019** (million)	**%**
General dealers	470 767	44,34%
Food, beverages and tobacco in specialised stores	89 331	8,41%
Pharmaceutical and medical goods, cosmetics and toiletries	76 223	7,18%
Textiles, clothing, footwear and leather goods	181 391	17,08%
Household furniture, appliances and equipment	42 763	4,03%
Hardware, paint and glass	79 709	7,51%
Other	121 618	11,45%
TOTAL	**1 061 802**	100%

Table 1.1:Percentage retail trade sales contribution per retail category (STATSSA, 2020)

This dissertation places emphasis only on five of the seven categories: retailers in i) general dealers, ii) food, beverage and tobacco in specialised stores, iii) pharmaceutical and medical goods cosmetics and toiletries, iv) textiles, clothing, footwear and leather goods, and v)

household furniture, appliances and equipment which makes up 81.10% or R860,475million of the *circa* R1.06trillion revenue shown in Table 1.1. Furthermore, this research only focuses on the Johannesburg Stock Exchange (JSE) - listed retailers, and the combined income of these listed retailers amounts to R621,328million of the R860,475million. This paper investigates the financial and non-financial factors that influence the decision of JSE listed retailers of the three categories, as mentioned earlier, to lease or buy their Corporate Real Estate, specifically distribution centres and warehouses.

1.2 Context

1.2.1 Retail in South Africa

The physical characteristics of real estate make it inherently inflexible in a world that has changed dramatically in the last few years, and continues to evolve, especially in the retail environment where the future of physical, brick-and-mortar stores are under pressure to adapt to change with the rise of e-commerce. E-commerce has grown globally by an estimated 17.9% from 2018 to 2019 to $3.46trillion, which makes up 16.476% of the global retail sales (Young, 2019) with an expected penetration of 22% in 2023 (Clement, 2019). It is unquestionable that, in interpreting the statistics, that retail shopping trends are pivoting towards consumers preferring to shop online instead of traditional brick-and-mortar stores which, coupled with the inflexibility of property, makes the case stronger for retailers to keep leasing their stores and even consider shorter-term leases. The advantage that South African retailers have is that e-commerce only penetrates *circa* 1% of the total retail market of R1.06trillion (Ngalonkulu, 2019) which is far below that of the average of the rest of the world. South Africa's retail landscape is not comparable to that of the majority of other developed and even developing nations, as the country has a much higher unemployment rate, and the consequence is South Africa's buy-power per capita (i.e. disposal income) is lower than most other countries. The effect of high unemployment, according to a study conducted in 2015, is that 55.5% of South Africans live below the poverty line of ZAR992 (US$75) per month which corroborates the fact that South Africa as a whole has limited access to disposal income (Lehola, 2017).

The future of e-commerce growth in South Africa is still reasonably uncertain and unpredictable, albeit growing. Since South Africa's GDP grows at a slow real-rate of 0.6% year-on-year (STATSSA, 2019), retailers do not expect a massive increase in the penetration rate in the next few years. The basis of this deduction is the unwillingness of some retail businesses to reinvest more than 10% to 20% of their revenue back into their e-commerce

infrastructure (Goldstuck, 2018). Goldstuck further commented in an interview that the traditional mall culture which South Africa enjoys creates a further barrier to growth (Mahlaka, 2016). Two other factors which inhibit e-commerce growth in South Africa are access to the internet and the cost of broadband, according to Vuyo Mpako, head of digital channels and e-commerce at Standard Bank (Mahlaka, 2016).

E-commerce will inevitably continue to penetrate the retail market and the consequence for brick-and-mortar retail stores can be detrimental given that it is highly dependent on a sophisticated distribution network and less so on a brick-and-mortar footprint; which can change the landscape for retailers wholly. Consequently, it is prudent for retailers to shift their focus on the growth of their logistic related real estate portfolio to cater for their supply chain and logistics requirements but also to accommodate the future of the retail landscape. The changing retail landscape makes the question of whether retailers should lease or buy their Corporate Real Estate so much more relevant.

1.2.2 Corporate Real Estate

Corporate Real Estate (CRE) is considered one of the four factors of production and is defined as "the land and buildings owned by companies not primarily in the real estate business" (Zeckhauser & Silverman, 1983). Moreover, it is making use of real estate assets for business operation purposes as opposed to serving as a real estate investment (Brueggeman & Fisher, 2018). Zeckhauser and Silverman (1983) created an awareness surrounding the importance of Corporate Real Estate when they observed that American companies' Corporate Real Estate accounted for an estimated 25% of their total assets (Zeckhauser & Silverman, 1983). Corporate Real Estate should, therefore, receive the same attention as other assets in an attempt to keep a company's operating expenses to a minimum. According to a report published by (Veale, 1989), companies in America continued to neglect the management of their Corporate Real Estate even though these assets can significantly contribute to the success or failure of a company. It is, therefore, prudent that South African companies should be aware of how CRE effects the bottom line of business and consider this, *inter alia*, to decide whether they should lease or buy these assets.

According to (Brown, Lapides & Rondeau, 1994), Corporate Real Estate is not limited to ownership of property but can be leased subject to the condition that it assists the business to achieve its primary, strategic objectives. (Wills, 2008) went further and classified Corporate

Real Estate into five separate classes within which six sub-groups exist. These sub-groups illustrate what makes up the real estate assets on a company's balance sheet:

Classification:

1. Strategic property: Those real estate assets a corporation owns, as well as control, for its operational requirements and its accompanying long-term strategy;
2. Flagship property: Those real estate assets that exemplify a business' corporate image and is controlled by way of a lease or ownership. In the case that these assets are leased, preference is to enter into a medium- to long term lease.
3. Core property: The real estate that a corporation makes use of for their medium-term operating activities and which is controlled, in most cases, through a lease; ownership is not a requisite. This real estate includes retail-, industrial- and commercial facilities from which they conduct their business.
4. Peripheral property: Real estate that is necessitated, on a short-term, by reoccurring, cyclical nature of specific operations and is almost always leased.
5. Surplus property: This real estate does not complement the company's long- or medium-term objectives nor their corporate strategy and is also regarded as disposable real estate.

Sub-groups:

i. Buildings: the cost of a company's buildings;
ii. Construction in progress: the capitalised amount of incomplete construction;
iii. Land: cost of land;
iv. Leases: capitalised financial leases and leasehold improvements;
v. Natural resources: cost of irreplaceable natural resources
vi. Other: components of real property that cannot be placed in the groups mentioned above

1.2.3 South African retailers' approach to Corporate Real Estate

A retailer generally considers Corporate Real Estate as, but not limited to, head- and regional offices, distribution centres, warehouses, data centres, manufacturing facilities and retail outlets or stores. From a CRE perspective, retailers' primary focus is on their retail real estate since these properties are of fundamental importance to the growth of their business; if stores do not exist, they cannot achieve their target revenue.

The majority of retailers have traditionally leased their stores since the inception of shopping centres which is attributed to the flexibility it creates should a store be moved, enlarged, reduced or even close. Most retailer's strategic approach to expanding their footprint is to open a set amount of stores annually. One can, therefore, deduce that it does not make sense, in most cases, for a retailer to own the stores from which they operate. This deduction is based on the following: i) it is time- and resource-intensive to build stores; ii) ownership of stores is capital intensive, and iii) ownership of stores restricts a retailer's flexibility in an ever-changing market. The deduction does not, however, necessarily apply to all retailers since some retailers that operate from large store formats, such as food retailers, might elect to own their stores provided that the investment is feasible and long-term focussed.

The worldwide shift to e-commerce from traditional retail is changing the landscape for retailers worldwide. The uncertainty surrounding how e-commerce will affect retailers in South Africa as well as when e-commerce's penetration rate will increase, and consequently render traditional retailers redundant, contributes to the lack of change in the South African retail environment. Consequently, South African retailers' *modus operandi* has not changed dramatically; they continue to open new traditional brick-and-mortar stores to maintain their sales growth (Mr Price Group Limited, 2019; Pepkor Holdings Limited, 2019; The Foschini Group Limited, 2019). The unanswered question, however, remains: do apparel retailers for example apply the same principle when considering office or warehouse real estate.

No research exists that provides insight into how South African retailers approach warehouses and distribution centre acquisitions when they require these types of Corporate Real Estate. This minor dissertation aims to answer this question.

1.2.4 Industrial real estate from a South African retailer's perspective

MSCI classifies the industrial real estate sector according to the following property types (MSCI Inc, 2020):

- Warehouse/distribution: Warehouse, distribution centre and refrigerated distribution;
- Manufacturing/production: Light manufacturing and heavy manufacturing;
- Other industrial: Workshops, truck terminal, self-storage warehouse showroom, data/switch centre, R&D flex, industrial park and other industrial.

Retailers focus on distribution centres and warehouses for their logistics requirements and therefore, the focus of this dissertation will be limited to these property types and will not consider any other property types in the industrial and manufacturing sub-sectors.

1.2.5 Difference between a warehouse and distribution centre

Warehouses and distribution centres appear similar when observed from the outside, but differ vastly internally and operationally. A warehouse is essentially a large, open space whereas a distribution centre is more complicated due to the high velocity, high volume nature of the operations; a distribution centre is designed for fast intake and rapid shipment of goods (Morgan, 2018; Sjouerman, 2018). The primary difference between the two is that a warehouse caters for long term storage, whereas distribution centres cater for short-term storage (Morgan, 2018; Sjouerman, 2018).

A warehouse is only used for the storage of goods while a distribution centre caters for additional services such as i) transportation, ii) cross-docking, iii) order fulfilment, iv) labelling and packaging, v) order processing, vi) order preparation, vii) shipping and receiving, viii) returned goods processing and ix) performance measurement. In essence, a distribution centre can serve as a warehouse, but a warehouse cannot be utilised as a distribution centre.

Distribution centres are generally located close to highways and areas that are easily accessible, which is vital to drive transportation efficiencies and keep distribution cost low, whereas warehouses are less sensitive to location requirements. Both of these types of real estate are utilised in a retail environment but might differ from business to business (Morgan, 2018; Sjouerman, 2018).

1.3 Background to the study

Over the last half-century, several studies (Benjamin, de la Torre & Musumeci, 1998; Lewis & Schallheim, 1992; Myers, Dill & Bautista, 1976; Sharpe & Nguyen, 1995; Smith & Wakeman, 1985) have investigated the financial and non-financial determinants, which underpin whether a corporation should lease or buy their corporate assets; the most prominent of these studies are Barkham and Park (2011); Myers, Dill and Bautista (1976). From the literature, a deduction is made that the following drivers influenced the case in favour of leasing rather than owning (Lasfer, 2007): (1) avoiding debt financing/ debt substitution (Ang & Peterson, 1984; Marston & Harris, 1988); (2) tax benefits (Barclay & Smith, 1995; Graham, Lemmon & Schallheim, 1998; Sharpe & Nguyen, 1995); and (3) mitigating agency conflict (Smith & Wakeman, 1985;

Stulz & Johnson, 1985). (Lasfer, 2007), however, noted that the extensive empirical evidence found in the literature varies and one cannot conclusively derive, from the research, what the determinants are that influence a company in choosing whether to lease or to buy CRE.

Furthermore, the literature fails to exemplify, and focus on, Corporate Real Estate as a corporate asset, but instead, the focus is placed on plant and machinery even though real estate is the most significant fixed asset contributor (Lasfer, 2007; Redman & Tanner, 1991).

The topic surrounding the Corporate Real Estate lease-versus-buy debate has received less attention in the literature, compared to other assets, owing to the heterogeneous, intangible characteristics of real estate which adds to the complexity in arriving at the decision to lease or buy Corporate Real Estate when compared to other corporate assets (Barkham & Park, 2011; Manning, 1991; Redman & Tanner, 1991; Rodriguez & Sirmans, 1996). (Barkham & Park, 2011; Lasfer, 2007) attempt to extend the research by explicitly focussing on real estate in answering the question of what determinants influence companies' decision to lease or buy their Corporate Real Estate.

No research exists that demonstrates how South African retailers decide on whether they should lease or buy their warehouses and distribution centres. This study intends to fill this void.

1.4 Problem Statement

The problem to be examined in this study may be stated as:

The majority of retailers in South Africa follow a similar strategy when expanding their retail footprint. The most common acquisition method that gives effect to their expansion is for retailers to lease the majority of stores/outlets. However, from a warehouse and distribution centre corporate real estate perspective, not much insight or research exists which demonstrates what acquisition method retailers prefer nor which factors they consider when faced with a lease-versus-buy decision.

This proposed research aims to provide insight into which acquisition methods retailers prefer when distribution centres and/or warehouses are required as well as which financial and non-financial factors are considered and preferred.

1.5 Research Question

The research question to be addressed may be stated as:

What financial and non-financial determinants influence South African Retailers' decision to lease or own their Corporate Real Estate, specifically warehouses and distribution centres?

1.6 Research Aim

The intended aim of this research is to:

Provide empirical evidence which supports the notion that both financial and non-financial determinants influence JSE listed South African Retailers' decision when confronted with the choice of whether they should lease or own their Corporate Real Estate, specifically warehouses and distribution centres, as well as what these factors are.

1.7 Research Proposition

The research proposition may be outlined as:

Retailers consider both financial and non-financial determinants in deciding if they should lease or own their Corporate Real Estate, specifically warehouses and distribution centres.

1.8 Research Objectives

The following describes the research objectives that are to be achieved:

- *Determine what financial determinants guide retailers in deciding if they should lease or own their warehouses and distribution centres;*
- *Determine what non-financial determinants guide retailers in deciding if they should lease or own their warehouses and distribution centres;*
- *Deduce which of the two determinants (financial and non-financial) is regarded as the most important*
- *Provide insight into the lease-versus-buy decision-making process of retailers*

1.9 Research Method

The above objectives will be achieved by adopting the following research method:

(a) A literature review of matter pertinent to this study

(b) Questionnaire-based survey to be completed by the management of the Corporate Real Estate division of the respective Retailers

(c) Discussion and findings

(d) Conclusions and recommendations

1.10 Limitations

This study is subject to the following limitations:

(a) The Retailers considered trade in South Africa primarily, and their primary listing is on the Johannesburg Stock Exchange.

(b) This research only considers three of the seven retail categories as defined by Statistics South Africa: i) general dealers, ii) food, beverage and tobacco in specialised stores, iii) pharmaceutical and medical goods cosmetics and toiletries, iv) textiles, clothing, footwear and leather goods, and v) household furniture, appliances and equipment.

(c) This research is limited to Corporate Real Estate; real estate held as an investment by retailers does not form part of this research

(d) This research considers only warehouses and distribution centres.

1.11 Structure of the Research Report

The research report will be structured into five chapters.

In **Chapter 1**, an introduction is given to the research topic; context is provided as well as a brief background to the study. Following which, a concise statement of the research problem; research question and the research proposition is provided. The research aim and objectives are thereafter defined and are followed by a short description of the research methodology.

Chapter 2 provides a critical review of the literature pertaining to the question of whether companies should lease or buy their Corporate Real Estate.

Chapter 3 draws together the principal issues raised in Chapter 2, and proposes a survey-based research design with the intent to address the research questions: *What financial and non-financial factors influence South African JSE listed Retailers' decision to lease or buy their warehouses and distribution centres?*

Chapter 4 comprises the analysis and interpretation of the questionnaire survey data together with a discussion of the findings.

Concluding discussion is pursued in **Chapter 5**, and practice recommendations are made. This is followed by a full list of **References** for the research report and an **Appendix** containing the survey research instrument.

2. CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The decision between leasing or buying Corporate Real Estate is one of the most critical investment decisions that a company makes (Ghyoot, 2004). Organisations often deter making decisions regarding real estate investments, since the implementation time is long and owing to the fundamental nature of a building; the intention is to last for decades constantly reminding the owner whether it was a good or bad investment (O'Mara, 1999:2). Real estate decisions are further complicated when an organisation is given a choice between either leasing or owning the real estate from which they operate. Most businesses cannot function without making use of real estate in some way, shape or form; even though the need would differ from one business to another (McDonagh & Nichols, 2009). As an example, the need for space, expressed as the square meter occupied, for an online retailer would be significantly less than a traditional, brick-and-mortar retailer since the latter requires a physical store and the former do not.

Veale (1989) researched how businesses that do not primarily operate in the real estate industry manage their land and buildings, i.e. corporate real estate. One-third of the respondents in this study reported that their real property accounted for more than 50% of their total assets. A similar study was conducted by Zeckhauser and Silverman (1983). They concluded that, conservatively, one-quarter of corporate assets of large United States businesses consisted of CRE. A recent study by Ntene, Azasu and Owusu-Ansah (2020) concluded that in the last decade, the ratio of corporate real estate to total assets has not changed significantly.

Land (CRE), labour and capital are the three essential resources for any company, but it is apparent that labour and capital, *inter alia*, have enjoyed more consideration from academics and real estate practitioners even though CRE forms such a large asset base in corporations all over the world (Schaefers, 1999). The failure of researchers to give the appropriate attention to real estate compound the effect seeing that it enjoys such significant impact and influence on businesses. The strategic imperative, when faced with the question of whether to own or lease corporate real estate, remains relatively unexplored, specifically with regards to retailers and their requirement for warehouses and distribution centres.

2.2 Corporate Real Estate

Corporate Real Estate has been defined as the land and buildings owned by a company that is "*not primarily in the real estate business*" and also not held as an asset for investment purposes (Brueggeman, Fisher & Porter, 1990; Zeckhauser & Silverman, 1983). According to Brown, Lapides and Rondeau (1994), Corporate Real Estate is not limited to ownership of property but can be leased subject to the condition that it assists the business to achieve its primary, strategic objectives. Some authors have gone as far as to include CRE as the fifth resource to the traditional corporate resources, i.e. people, technology, information and capital (Hwa, 2003; Joroff et al., 1993).

A business that holds real estate with the intent to derive risk-adjusted returns for its investors is considered a commercial real estate business with commercial real estate assets; whereas the real estate that a business employs to support its primary business functions is regarded as Corporate Real Estate (CRE). Implicitly one can derive that Corporate Real Estate represents the demand side of the real estate market while commercial real estate considers the supply side (Arkesteijn, 2019). In essence, real estate has no value to a company, from a Corporate Real Estate perspective, if it does not complement the objectives and strategic advancements of the company, irrespective of its economic value in the external property market (O'Mara, 1999:4). These principles are universally true, although the primary literature does not consider the nuances which certain businesses introduce and thereby undermine these principles. An example of this might be when a holdings company, which is not primarily in the real estate business, has a wholly-owned real estate subsidiary within their corporate structure which functions primarily to serve the holdings company, but also act as an independent business.

The primary contribution and role which real estate plays in a corporation, from a financial perspective, are twofold: from an asset perspective if it raises an organisation's equity and as a cost if it reduces profitability; the rationale being real estate is a resource which brings benefit to a business entity. When a firm decides to sell a real estate asset, in the scenario where the value appreciated, its equity consequently increases (Gale & Case, 1989). Gibson and Barkham (2001) make the case that corporations that view real estate as an asset would implement CRE strategies that create, maintains and improve the value of an organisation. Gale and Case (1989) found that 90% of US corporations considered real estate as an additional factor of production together with labour and equipment. Corporations that consider real estate as a cost is inclined to minimise the related costs, as appose to strategically manage it.

A study conducted in 1981 by Zeckhauser and Silverman (1983), focusing on large corporations in the United States of America, established that 25% - 40% of their total assets consist of real assets, more specifically real estate. Bon and Luck (1999); Johnson, Linda and Keasler (1993); Veale (1989) corroborated these statistics which appeared relatively unchanged since Zechhauser and Silverman published their seminal study in 1983. Ntene, Azasu and Owusu-Ansah (2020) concluded that the ratio of real estate assets to the total assets of a corporation had not changed much over the last two decades. These findings are of great significance but from a South African perspective it does merely provides the researcher with insight into the trends of developed countries and one cannot with confidence infer that the same hold for businesses in South Africa. The literature fell short of providing insight into the South African context nor did it give insight into the retailers' ratio of real estate asset holdings.

Real estate-related expenses are one of the most significant expenses in a business other than human resource expenses and are deemed by many corporations as an unavoidable cost of operations (Veale, 1989). Despite this as well as the fact that corporate real estate accounts for between 25%-40% of total assets, it seems that corporations, specifically the management, still fail to give CRE the attention it deserves (Brounen & Eichholtz, 2005).

Companies that do not consider real estate as a prime revenue stream contributor dislike facing decisions relating to real estate matters because of the long term, capital intensive nature of real estate (O'Mara, 1999:2). One might argue that the decision-makers of a business that only make use of real estate to support their business operations might not be equipped or qualified to make decisions about real estate investments (Lindholm & Leväinen, 2006). The alternative narrative is that senior management does not consider CRE to be equally important to other aspects of their business, and therefore the lack of attention to CRE despite the significant balance sheet and income statement implication of CRE (Nourse & Roulac, 1993; Rodriguez & Sirmans, 1996; Veale, 1989). CRE enables a business to offer a unique value proposition, or competitive advantage, which one can argue is especially true for retailers (Roulac, 2001). Roulac (2001) further explains that real estate strategies can exemplify a business competitive edge which can yield other consequential results viz: i) create and retain customers; ii) create a superior workplace environment which attracts and retains superior human resources; iii) promote, enhance and create effective, productive and efficient business processes; iv) promote enterprise cultures and values; v) stimulate innovation and learning; vi) enhance core competencies, and vii) enhance shareholders wealth.

Adendorff and Nkado (1996) broadly classified CRE into two major types of real estate that a company typically owns: i) strategic property and ii) core property. Strategic property refers to the real estate which a business owns, occupy and by implication controls for its operations with a long-term corporate strategy in mind. This typically includes, *inter alia*, manufacturing plants and warehouses. Core property refers to the real estate which a business occupies and controls for its existing and future operations with a medium-term corporate strategy in mind. These properties typically include, *inter alia*, office-, industrial- and retail real estate from which these companies operate (Adendorff & Nkado, 1996; Hwa, 2003).

Wills (2008) have expanded on Adendorff and Nkado's (1996) broad CRE classification by increasing the classification to five classes which, by CRE's implicit definition referred to in this paper, excludes real estate held by any corporations as their primary portion, or a subset, of their investment strategy (Wills, 2008):

- Strategic property: Those real estate assets a corporation owns, as well as controls, for its operational requirements and its accompanying long-term strategy;
- Flagship property: Those real estate assets that exemplify a business' corporate image and is controlled by way of a lease or ownership. In the case that these assets are leased, preference is to be given to a medium- to long term lease.
- Core property: The real estate that a corporation makes use of for their medium-term operating activities and which is controlled, in most cases, by means of a lease; ownership is not a requisite. This real estate includes retail-, industrial- and commercial facilities from which they conduct their business.
- Peripheral property: Real estate that is necessitated, on a short-term, by reoccurring, cyclical nature of specific operations and is almost always leased.
- Surplus property: This real estate does not complement the company's long- or medium-term objectives nor their corporate strategy and is also regarded as disposable real estate.

Nourse and Roulac (1993) identified six subtypes of real estate that falls within the five primary classes that are described by Wills (2008):

i. The cost of a company's buildings;
ii. the capitalised amount of incomplete construction;
iii. cost of land;
iv. capitalised financial leases and leasehold improvements;
v. cost of irreplaceable natural resources; and
vi. components of real property that cannot be placed in the groups mentioned above.

2.3 Corporate Real Estate Acquisition: Lease Versus Buy (LVB)

The core definition of CRE infers that two overarching alternatives exits which a business considers when acquiring requisite space to support their business functions; CRE can either be leased, owned or in specific circumstances a combination of the two (Brown, Lapides & Rondeau, 1994; Brueggeman, Fisher & Porter, 1990; Manning, 1991; O'Mara, 1999; Zeckhauser & Silverman, 1983). Ghyoot (2004) averred that one of the most significant investment decisions a business can make is to choose between whether they plan to buy or lease the real estate they wish to occupy. Brounen and Eichholtz (2005) conducted a study on 4,636 companies throughout nine industrialised economies and concluded that ownership of real estate varies across industries. Manufacturing and heavy industries were found to be in the higher range and business service and advisory on the lower end. The study also observed that between 1992 and 2000, CRE ownership, expressed as a ratio of plant, property and equipment to total assets ($\frac{PPE}{total\ assets}$), decreased from 0.34 to 0.29.

The reason that corporations, historically, owned their CRE is attributable to a lack of competitive rentable stock in the real estate market. Consequently, corporations were obligated to own their CRE. Furthermore, non-real estate corporations were forced to own their CRE as a result of i) real estate corporations' focus on acquiring new developments as opposed to efficiently managing their existing real estate portfolio; ii) long lifecycle of real estate; and iii) the relatively low merger and acquisition activities in the market (Linneman, 1998). The general strategic arguments made for CRE ownership by non-real estate corporations is based on risk management and financial diversification matters (Edward Graham, Galbraith & Stiles, 2014)

Many authors have argued that corporations should lease their CRE rather than own it and, in doing so, they can allocate capital to more productive uses instead (Lewellen, Long & McConnell, 1976; Miller & Upton, 1976). This view is supported by studies such as Linneman (1998), Deng and Gyrourko (1999) Brounen and Eichholtz (2005). These studies conclude that CRE ownership negatively influences the performance of corporations that do not primarily use real estate to derive a return (Zhao & Sing, 2016). Other studies found that corporations with a high CRE to total assets ratio, either through ownership or capital leases, are exposed to higher systematic- and real estate market risks (Ling, David, Naranjo & Ryngaert, 2012; Tuzel, 2010).

Zhao and Sing (2016) identified two reasons why corporations are motivated to own CRE. The first and foremost reason is that CRE assets can be utilised as collateral when raising debt in the market (i.e. enhances a corporation's financial capacity to raise debt); a positive correlation has been found to exist between firms' investments and the value of their CRE (Chaney, Sraer & Thesmar, 2012; Gan, 2007). A second, corporate governance-related reason for excessive CRE acquisition is that it complements executive boards' "empire-building" *modus operandi* (Coles, Daniel & Naveen, 2006; Veale, 1989). Other studies have, however, observed that more executives are incorporating a CRE strategy as well as aligning it with the overarching business strategy; consequently, executives are critically reviewing any CRE related decision (Brounen & Eichholtz, 2005). The consequence is that leasing has become more favourable than owning CRE, which in turn eases the capital burden of fixed real assets, creates flexibility for a firm and creates off-balance-sheet financing (Redman & Tanner, 1991). Effective January 2019, the off-balance-sheet financing which a lease provided is no longer applicable since the introduction of the revised accounting standards, IFRS16.

A lease is defined as an agreement between two parties, the lessor and the lessee. The lessor is the legal owner of the real estate asset, and the lessee has the contractual right to use the space within the legal framework of the lease. A leasing strategy has become common for some corporations since some perceive a lease as a mechanism to attain a hundred per cent financing contract that has no direct bearing on operational cash flows and thus preserve liquidity (Brealey, 2019; Schallheim, 1994). Some researchers have challenged the hypothesis that a lease creates liquidity in a company as this is based on the premise that debt and leases are perfect substitutions for one another (Zhao & Sing, 2016). According to Ang and Peterson (1984), no substantial empirical evidence exists which demonstrates that corporations that lease fixed assets maintain lower levels of debt compared to corporations that own their fixed assets. Leasing does, however, create debt relief for constrained corporations by creating debt capacity (typically through a sale and leaseback transactions) (Eisfeldt & Rampini, 2009). Typical lease structures that corporations consider include capital leases (also considered financial leases), operating leases and sale-and-leaseback arrangements. The International Financial Reporting Standard (IFRS) introduced a new accounting standard, IFRS 16, which changed the standard on lease accounting dramatically. Before January 2019 (the implementation date of IFRS 16), operating leases were only considered an expense to be deferred over the lease term, and financial/capital leases were reflected on the corporation's balance sheet as an asset and liability. The new accounting standard requires the majority of leases to be capitalised except

for a few short-term leases (Morales-Díaz & Zamora-Ramírez, 2018). We expect that this might influence the current view on leasing and future research should take note of the significant departure from previous accounting standards introduced by IFRS16.

Even though the trend seems to shift towards leasing as opposed to owning CRE, a study by Redman, Tanner and Manakyan (2002) found that executives prefer financing CRE internally through cash flows generated by the company. Studies such as that of Brounen and Eichholtz (2005) indicates that there is a decline in owning CRE and that CRE ownership negatively influences the performance of non-real estate corporations. This creates an ambiguity in deriving an answer to whether CRE ownership is diminishing or increasing (Brounen & Eichholtz, 2005; Deng & Gyourko, 1999; Linneman, 1998; Zhao & Sing, 2016). Redman, Tanner and Manakyan (2002) ranked the CRE type of financing from 1 to 14: 1) operating cash flow, 2) secured property mortgage loan, 3) long-term leasing, 4) sale and leaseback, 5) joint venture, 6) sale of common stock, 7) sale of mortgage bonds, 8) sale of preferred stock and sale of collateralised mortgage obligations, 9) sale of commercial paper and Mortgage REITs, 10) sale of unsecured bonds and hybrid REITs, 11) limited partnership, 12) equity REITs, 13) sale of commercial mortgage-backed debt and 14) participating mortgages. This study's outcome validates the view of most studies in the field of corporate finance; practical considerations are considered more important than the theoretical concerns when asset-financing is considered. These practical considerations include financing costs, the cost of debt, financial market conditions and tax implications.

Contradicting outcomes are observed among studies that assess the impact of CRE ownership on a corporation's share price (Zhao & Sing, 2016). Corporate real estate assets are considered highly illiquid and irreversible (i.e. the value of capital may not be fully recoverable when resold) and based on this premise, Tuzel (2010) argues that a corporation that owns CRE incurs a corrective cost when they are forced to sell their real estate holdings during receding or depressing markets. Consequently, high irreversibility discounts contribute to increasing corporations' systematic risk premium by between 3% and 6% compared to corporations that hold fewer CRE assets (Tuzel, 2010). Brounen and Eicholtz (2005), however, found that corporations that own more CRE mostly decrease their systematic risk premium and return of a corporation, albeit not valid for every corporation (Brounen & Eichholtz, 2005).

(Ghyoot, 2004) constructed a table comparing the advantages and disadvantages of leasing and owning CRE. This table is illustrated in **Table 2.1** below.

ADVANTAGES AND DISADVANTAGES OF LEASING AND PURCHASING REAL ESTATE

ADVANTAGES OF LEASING

- May lead to more efficient space usage
- Conserves capital for operations
- Maintenance responsibility may be avoided
- Short term flexibility of space usage and retention of mobility
- Opportunity to test a location without long term commitment
- Need not use an entire building or develop an entire site
- Opportunity to obtain space in a prime area or building
- Leaves property development, property management and market risk to professionals;
- Specialisation reduces search and information costs for both parties
- Flexibility and freedom to expand or reduce the portfolio in response to market changes.
- Excess space may be subleased and sizes and layouts may be changed
- Rent is tax-deductible, as are operating expenses under a net lease
- Anchor tenants may have their accommodation costs subsidised by other tenants
- Ensures inclusion of property costs in profit and loss account, allowing a true estimate of net profit for the business
- Avoids the cost of obsolescence and risk of market value decline
- May keep much of facility costs off the balance sheet
- Provides 100% financing, without using up financing options of the firm
- May include an option to purchase
- Preferable for firms that have high costs of capital
- Increases liquidity and frees up working capital
- Avoids high transaction costs (search, transfer, commission and professional fees) of purchasing
- Fewer management concerns and lower long term environmental responsibility, because the tenant is not the owner

DISADVANTAGES OF LEASING

- The tenant has no stake in the capital value of the asset at the end of the lease unless an option to buy was negotiated
- Lease does not have a fixed interest cost; rent is a variable cost if the agreement allows for periodic rent increases
- Restrictive clauses in leases limit flexibility
- Inability to expand space at will or to make improvements to the property
- Less control over adjacent occupants
- If the leased property is no longer required and subleasing is not possible, lease payments must be maintained

ADVANTAGES OF OWNING

- Provides control and captures any increase in value
- Can cater to very specific space requirements
- Can develop if a suitable rental property is not available
- Long term operation possible; will not have to move
- Deduction of operating expenses, depreciation and interest from taxable income
- Accelerated tax depreciation is possible for some types of property
- Investment of excess capital. Can be refinanced, sold under sale-leaseback or sold outright if funds are needed later
- May capture the benefits of asset appreciation, especially if other development is attracted to the area
- May be developed in locations not favoured by institutional investors, with space provided for future expansion
- In the long term, the overall cost of occupying a facility is usually less than for leasing
- Annual mortgage expenses may be fixed at present rates and are thus not subject to inflation or market-driven rent increases
- The facility may be custom designed to meet specific corporate needs and to promote the corporate culture and marketing image; better control of surroundings and adjacent occupants
- Freedom of choice in property management and use, for example, additional income from subleasing is possible and restrictive lease conditions are avoided
- Control over management costs

DISADVANTAGES OF OWNING

- Owner-occupants may use space wastefully
- Ownership ties up capital, which could be used for operations
- The sunk cost has been a primary cause of delays in rationalisation programmes and has caused substantial write-offs of property assets
- Market risk affects the residual value of the property
- Management responsibilities
- Possible negative impact on financial statements; ownership can exaggerate balance sheet liabilities and adversely affect financial performance metrics
- Over time, appreciating assets carried at book value may attract corporate raiders
- Developing and owning property may distract senior management from running the business
- If the project includes tenants, the company is in the property rental business by default
- Along with ownership come responsibilities to the environment and the community
- Initial high capital cost and possible reduced liquidity

Table 2.1: Advantages and Disadvantages of leasing and owning CRE (Ghyoot, 2004)

(Ghyoot, 2004)noted that a sale-and-leaseback trend was rising in South Africa and cited two examples of corporations that have opted to create liquidity utilising a sale-and-leaseback strategy. One such company that utilised a sale-and-leaseback mechanism is an agricultural corporation that disposed of all its grain silos. Another company, the national telephone service provider, Telkom, disposed of all their real estate assets and only leased back the space that they required (Ghyoot, 2004). Unfortunately, Ghyoot (2004)'s research is outdated and there are merits in revisiting the research and ascertain if the trend continued or not. This would particularly be insightful in a post-COVID-19 environment where many businesses are capital-constrained.

The contradiction in the literature, as well as observed in corporation's trends and policies, renders the outcome of whether corporations will lease or buy their CRE inconclusive. However, there has been no study published on how retailers approach the decision to lease or buy their warehouses and distribution centres. This research endeavours to fill this gap in the literature by demonstrating how JSE listed retailers in South Africa approach the lease-versus-buy decision when considering distribution centres and warehouses.

2.4 Lease versus Buy (LVB): Financial- and Non-financial Determinants

The capital investment decision, in most cases, starts with a financial assessment that embarks on comparing a discounted cash flow for both the leasing and buying option at an appropriate discount rate. However, CRE should not be regarded as having the same qualities and characteristics of other tangible assets, since real estate inherently enjoys various intangible traits which are challenging to integrate into existing financial assessment models in deriving whether a corporation should lease or own their CRE (Barkham & Park, 2011). Data from Redman and Tanner (1991), a study conducted in the late 1980s, concluded that the majority (80% in this study) of surveyed corporations based their lease versus buy decisions on purely financial considerations. However, this study fails to include non-financial determinants as part of the survey. Ghyoot (2004) is one of the main studies that highlight the determinant of lease or buy decisions within the context of South Africa. The study illustrated that both qualitative and quantitative considerations go into the lease versus buy analysis for CRE and is inherently more complicated when compared to lease or buy decisions relating to other assets such as equipment or motor vehicles.

2.4.1 Financial determinants

Classical corporate finance theory posits that the way in which a business creates maximum shareholder value is to viz: i) only consider the economic value model rather than the accounting model when considering capital investment decisions; ii) ensure that the cash return on investment is higher than the relevant cost of capital; iii) give due attention to, not underestimate, the all-encompassing cost of capital to ensure investments' value is not compromised upon implementation; and iv) not overestimate the cost of capital; otherwise, the hurdle rates will render potential investments unfeasible (Brealey, 2019). These are some of the oversimplified classic finance theories, which is theoretically correct in a perfect capital market where the manner of financing an investment will have no bearing on the value of the corporation (Brealey, 2019). Based on the classical corporate finance theory, a corporation's enterprise value is independent of its financing structure, and as the corporation's level of debt rises, the cost of equity changes in order for the cost of capital to remain constant (Trundle, 2005). Consequently, the only metric to measure the value of an investment or asset is the real cash flow the investment generates and therefore the question of how it is finance (by way of equity, debt or leasing) is, in a perfect market, irrelevant. Therefore it is contended that consideration should only be given to i) the quantum of space; ii) the efficiency of the space; and iii) the cost of the space (Trundle, 2005).

Moreover, the existing literature considers the following financial determinants when assessing whether a corporation should lease or buy their CRE:

2.4.1.1 *Share performance and shareholder return*

The literature is ambiguous on whether ownership of CRE affects the share performance of a corporation negatively or positively. Rodney (2001) and Lasfer's (2007) research suggests that CRE should be leased since corporations that lease their CRE outperform corporations that own their CRE, i.e. higher returns to their shareholders (Lasfer, 2007; Rodney, 2001). The research suggests that a corporation should strive to achieve a balance between leasing and owning CRE since the latter creates collateral for shareholders. Other research, in studying the effects of sale-and-leaseback CRE transactions, established that substituting financing mechanisms (lease for ownership or *visa versa*) does not guarantee an increase in a corporation's value. The market, instead, considers other factors in combination with the financing mechanisms: operational competency of the business, the overall performance of the sector, the quality of the management team and other factors which directly impact the cash a company can generate (Devaney & Lizieri, 2004). One can argue that in the scenario when a

company invests in real estate, they lock up capital in a typical lower-yielding asset (specifically when retail is compared to real estate) and therefore opportunity cost might be lost which might lead to damage in shareholder value. The inverse would be true if an external company that enjoys a lower hurdle rate would finance the real estate on behalf of the occupier, say by means of a lease agreement, owing to optimal capital deployment.

2.4.1.2 *Capital availability*

The ability of a corporation to access equity and debt markets plays a significant role in influencing the decisions of whether CRE should be leased or owned. It is only logical that if a firm is not able to raise debt in terms of their covenant or they cannot raise equity by selling shares that their only option is to lease any new CRE. Furthermore, leasing would also be favoured, where a corporation's weighted average cost of capital is high (Sharpe & Nguyen, 1995).

2.4.1.3 *Tax*

A significant advantage in leasing is that it provides an opportunity to reduce tax (Benjamin, de la Torre & Musumeci, 1998). Conversely, owning CRE provides a corporation with the opportunity to claim a tax benefit through asset depreciation or capital allowance (Lasfer, 2005). However, the opinion on the tax-related advantages associated with leasing is conflicting. Sharpe and Nguyen (1995) and Lasfer (2007) observed that there is a tendency to lease assets in the scenario where corporations enjoy lower tax rates, and accompanying tax allowance, and when corporations experience significant tax loss. (Graham, Lemmon & Schallheim, 1998) however, observed a negative link between tax rates and leases and a positive relationship between tax rates and debt exposure.

2.4.1.4 *Accounting*

If a firm chooses to lease its CRE, it will be subjected to monthly lease payments which affect the profit and loss statement of a company and also earnings before interest, taxes, depreciation, and amortisation. Ownership, however, does not require lease payments, but can in some cases include mortgage payments. Generally, the only associated expenditure is the repair and maintenance cost.

2.4.1.5 *Liquidity*

CRE ownership places a significant burden on a company’s liquidity since the capital commitment is usually substantial, whereas leasing CRE has no bearing on the liquidity of a company.

Ali et al. (2008) adapted Weatherhead (1997) approach and created a simple table illustrating what financial determinants best defend the position to either lease or own CRE:

Financial determinants to either lease or own CRE	
Own	Lease
Circumvent rent escalation Avoid onerous long-term lease commitments Autonomous management of real estate related operating expenses Expensive plant and equipment invested in the property is protected Capital appreciation might outperform inflation levels Capital Allowances Development opportunities Enables Joint Venture programs Access to grants	Low capital requirement Provides liquidity in a corporation Creates flexibility in choosing less expensive or more expensive locations

Table 2.2: Financial-determinants: Reasons to Own or Lease CRE (Weatherhead, 1997)

In simple, layman terms the financial methods employed in evaluating the lease versus own decision tend to be focussed primarily on achieving one objective: to determine which option provides operating space at the lowest cost (Etter & Caldwell, 1995). These financial methods include the following:

- Comparing the net present value (NPV) of leasing versus owning (Redman & Tanner, 1991);
- Comparing the after-tax cost of leasing versus owning (Etter & Caldwell, 1995);
- Comparing the cash flow for leasing and buying discounted at an appropriate cost of capital (typically weighted average cost of capital) (Barkham & Park, 2011);
- Comparison of the internal rate of return of the differential cash flow for leasing and owning to the discount rate of the corporation (Avivi, 2017);
- Other financial analysis methods which consider accounting metrics include i) return on assets, ii) return on investment, iii) capital budgeting criteria and other statistical benchmarks (Lewis & Schallheim, 1992)

The inherent characteristics of real estate and the associated capital involved have a significant financial influence on a business which includes their credit facility, income statement, balance sheet and operating economics (Manning & Roulac, 2001). Moreover, Miles *et al.* (1989) goes further and argue that CRE is also able to influence corporate finance parameters such as price-to-book ratio, debt covenant, systematic risk, cost of equity and cost of debt. It is, therefore, justified that financial considerations are given such high considerations when assessing CRE investment (Miles, Pringle & Webb, 1989).

The existing literature fails to consider how corporates finance real estate, as a capital investment, as well as which mechanisms they employ to analyse these capital decisions and rather places an emphasis on plant, machinery and equipment.

2.4.2 Non-financial determinants

Barkham and Park (2011) suggest that although the core of the lease versus own decision may be driven primarily from a financial perspective, the underlying non-financial determinants often dominate the final decision. Previous studies have only emphasised the measurable quantitative, financial considerations for the lease versus buy decision and neglected the qualitative, non-financial considerations. Barkham and Park (2011) research was conducted in the United Kingdom using data gathered in 1998. The study demonstrated the necessity for a more comprehensive framework in deciding whether a corporation should lease or own its CRE. They suggested that the framework should include, over and above the financial considerations, corporate strategy, location analysis and real estate economics.

O'Mara (1999:239-242) outlined four dominating qualitative forces which corporations use to decide if CRE should be leased or owned. These are i) real estate characteristics required, ii) local real estate market conditions and dynamics, iii) financial position of the company and iv) overall context of the company. Although most qualitative criteria possess no physical form, they still create or dissolve real estate valuation such as location, access to transport, property access, views etc. (Muchengwa, 2018). O'Mara (1999), Brueggeman, Fisher and Porter (1990) and Barkham and Park (2011) analysed the following non-financial determinants that corporations often consider when deciding whether they should lease or own their CRE assets: (i) Location (ii) Characteristics and financial position of the company and corporate strategy (iii) Characteristics and financial position of the company and corporate strategy (iv) Local real estate market.

2.4.2.1 *Location*

One of the key drivers which encourages a corporation to own their property is the location relative to other amenities, relevant labour and transport. Further to these, the location should be safe in terms of security, and lastly the location should provide some visibility (Barkham & Park, 2011). In the scenario where business knows, for a fact, that they would be staying in a specific location, they should own the specific real estate to avoid being subjected to a landlord’s agenda (Ghyoot, 2004). The premise of this opinion relies on the ability to predict, with certainty, that an area would not become functionally obsolete, and as a result, deteriorate

in value, and become uninhabitable for the specific intended use. It is, therefore, impossible to know this for certain and therefore Ghyoot (2004)'s opinion would not in all circumstances hold up to further scrutiny.

2.4.2.2 *Characteristics and financial position of the company and corporate strategy*

A company's current size and growth trajectory heavily influence the lease-versus-buy decision; a corporation that is large and aggressively growing is more likely to lease CRE, which enables the corporation to continue growing (Lasfer, 2005). Conversely, Barkham and Park (2011) observed that the size of a firm, measured as the number of employees, does not influence the probability of ownership, but is instead dependent on the required operations space. The larger the space required, the higher propensity for ownership. This outcome would not necessarily yield the same outcome in the case that the research places a focus on warehouses and/or distribution centres. The outcome, therefore, might demonstrate a different outcome when a focus is placed on a specific real estate asset class. (Ghyoot, 2004) observed that companies that have been operating for a long time, function in a predictable market, offer products or services that are not characterised by a cyclic nature and whose demand is stable commonly have a propensity to own their CRE. The opposite is true for businesses that operate in a volatile, unpredictable market. These firms generally elect to lease their CRE.

2.4.2.3 *Characteristics of the CRE required*

If the space that a corporation requires is generic, then it is best suited to be leased since there would typically be more space available in the market as opposed to specialised or customised real estate. Generic space should therefore be leased and specialised space owned since these properties will typically not be available in the location that it is required (Ghyoot, 2004). The period that a corporation requires to occupy the requisite space plays a vital role in deciding whether CRE should be leased or owned; ownership is given preference when the lease period is long, and conversely CRE should be leased when the duration is short. Usually, this rationale is justified in that long term leases are usually accompanied by higher infrastructure and capital costs (Barkham & Park, 2011)

2.4.2.4 *Local real estate market*

In the scenario where an asset in a specific location is small compared to the value of the company and the market-risk affects the residual value of the said property, then a firm may still elect to own the property. Conversely, if the property forms a large part of the company's asset value, then the tendency might be to rather lease the CRE (Ghyoot, 2004). Where the

local market is hostile; ownership in these areas is not encouraged as a firm needs to be flexible enough to leave should tensions escalate. In South Africa, this is especially true in an area where protest action frequently occurs (Ghyoot, 2004). Lastly, ownership assumes all real estate related risks whereas these risks are not applicable when leasing. In a similar vein, ownership benefits when the local real estate market performs well whereas there is no benefit to the firm that leases the property (Petison, 2007).

In considering the non-financial determinants of whether a corporation should lease or own their CRE, Ali et al. (2008) adapted Weatherhead (1997) approach and created a simple table illustrating what non-financial determinants best defends the position to either lease or own CRE:

Non-financial determinants to either lease or own CRE	
Own	Lease
Stock shortage: no rentable real estate Access to the relevant labour Establish community links with the intent to aid business Security Unique building design required Inability to move due to location requirements of the plant Access to transport links Exclusive location Autonomy in managing the property: outsourcing or insourcing	In the event of expanding or contracting, movement is easily achieved No related risks when highest and best use change (i.e. building becomes obsolete) Flexibility to move, i.e. when expanding, reducing space, etc. Availability of additional services The flexibility of size of leasing Leasing provides the opportunity to tests markets without substantial commitment burdens

Table 2.3: Non-financial determinants: Reasons to Own or Lease CRE (Weatherhead, 1997)

2.5 Conclusion

Corporate real estate makes up such a large portion of business expenses and assets, yet many companies and academics do not give adequate attention to the lease-versus-buy decision which it deserves. Real estate by nature has tangible and intangible characteristics which complicate the acquisition of real estate and especially corporate real estate. The literature over the last decade has, however, primarily considered financial determinants in the lease-versus-buy decision when acquiring corporate real estate. Furthermore, the research suggests that the prevailing assessment method in answering the lease-versus-buy question is a financial analysis and consequently the non-financial determinants might be ignored. The reason for the

omission of non-financial analysis can be attributed to the subjective nature of these determinants. Intangible characteristics of real estate are not properly addressed when attempting to answer the lease-versus-buy question; therefore, more consideration should be given to non-financial determinants in answering this question. One can conclude that there is a gap in the literature that addresses the subjective assessment of corporate real estate acquisition methods, i.e. leasing or owning.

The literature, similarly, focuses on greater economic-, first world nations such as the United State of America and countries in the European Union. The only study which gives attention to the manner of acquisition of corporate real estate in a South African context is Ghyoot (2004). The failure to address the lease-versus-buy question in a South African context, other than Ghyoot's (2004) research paper, creates a gap in the literature.

This minor dissertation attempts to fill these aforementioned gaps in the literature with a specific focus placed JSE listed retailers South African retailers. Moreover, this dissertation will focus on which financial- and non-financial determinants retailers consider when acquiring their distribution centres and/or warehouses and how that translates into either ownership or leasing of such corporate real estate.

3. CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

Chapter three outlines how this dissertation aims to answer the question "*What financial and non-financial determinants influence South African Retailers' decision to lease or buy their warehouses and distribution centres"*. This chapter sets out how the systematic analysis of the research problem is conducted within the parameters of a recognised scientific approach. Further to this, the chapter outlines which methodologies were used in the relevant literature in the preceding chapter, the research approach adopted in this study, the population of the study, the data collection method, respondent characteristics and ethical considerations in this research. This dissertation is conducted within the framework of an acceptable approach, the methods and procedures undertaken are valid and reliable and the research design aims to be unbiased (Goundar, 2012).

The research methodology used in this dissertation is a combination of that which Barkham and Abraham (2011) and Redman and Tanner (1991) used in their study. The quantitative survey in these studies comprised of a questionnaire distributed to various CRE occupiers in the United Kingdom and the United States, respectively. This dissertation will, however, focus on retailers listed on the Johannesburg Stock Exchange and also based in South Africa.

3.2 Methods Used In The Literature

3.2.1 Qualitative methods

3.2.1.1 *Semi-structured interviews*

Manning (1991) conducted face-to-face interviews with corporate real estate executives in two stages. During stage one, more than thirty CRE executives were interviewed. The interview sought to identify "excellent" CRE assets managers using a set of predetermined criteria. The researchers further isolated the top ten CRE executives and conducted a more thorough, expanded interview in an attempt to determine the similarities and dissimilarities between these corporations' decision-making processes and policies. The study concluded that the majority of these corporates favour leasing when presented with an opportunity to share in the residual equity of the CRE they lease. These lease structures are favoured over direct leases or ownership of CRE. The authors predicted that this trend will continue due to the increase in financial sophistication of both real estate landlords and CRE executives. Owing to the present

COVID-19 pandemic, face-to-face interviews will not be undertaken for our study. Future studies on the South African market can however consider face-to-face interviews.

3.2.1.2 *Case studies*

The only study that considers the lease-versus-buy in a South African context is (Ghyoot, 2004). In this research paper, the author argues that the financial management literature fails to provide examples from a real estate perspective in answering the lease-versus-buy question. Ghyoot (2004) therefore considered the financial and non-financial determinants referred to in international publications in the lease-versus-buy decision. Qualitative and quantitative considerations were used in this case study in an attempt to answer questions related to the lease-versus-buy decision. From a qualitative perspective, deriving an answer to this question has been shown to be very complex. Quantitative analysis was shown to be equally difficult since real estate investment differs from other disciplines when considering cash flow projections and selecting an appropriate discount rate. Ghyoot (2004) conducted a case study on a subsidised university hostel which involved conducting a financial analysis by discounting the projected cash flow to determine. From a quantitative perspective, this shows the relative merits of leasing versus owning real estate. The study concluded that even though financial analysis is a good tool to use in the lease-versus-buy decision, it should be used in conjunction with the qualitative factors and not simply as a stand-alone method. Although (Ghyoot, 2004) research method provides detailed insight into how such a decision is practically derived by a corporation, it lacks the scale, owing to the small sample size, to empirically test whether listed corporations will all consider and apply the same method when considering the acquisition of their CRE. In answering the lease-versus-buy question, a case study will suffice when used to supplement another method but the method in isolation lacks the ability and rigidity to test this dissertation's hypothesis.

3.2.1.3 *Desktop studies*

Johnson, Robert W. and Lewellen (1973) critically reviewed existing literature on the topic of whether a corporation should lease or buy their fixed assets and argued that the customary analysis is incorrect. Their main critique of the existing literature is: i) financial charges should not be considered in discounting the cash flow to derive a net present value, ii) inadequate recognition is given to differences in risk of each cash flow contributor, and iii) the decision-making process is incomplete if consideration is given only to the net present value of the cash flow. As a consequence of the gap in the literature, we do not consider this method as sufficient in its attempt to answer this dissertation's question which is: "*what financial and non-financial*

determinants drive South African Retailers' decision to lease or buy their warehouses and/or distribution centres".

3.2.2 Quantitative method

3.2.2.1 *Data analysis*

Sharpe and Nguyen (1995) made use of data, in the form of financial statements, collected from Standard and Poor's Compustat of active firms in the United States between the year 1986 and 1991. The firms excluded from this research included foreign-owned corporations, firms whose assets consist primarily of real estate or natural resources and lastly which primary business involves leasing. The sample data contained approximately 2000 cross-sectional observations per year. The study aimed to i) measure the propensity of corporations to use capital leases; 2) test the hypothesis that corporations are more inclined to lease CRE when faced with a high cost of external capital owing to financial contracting cost, and iii) identify other variables that influence the propensity to lease.

Lasfer (2007) tested the hypothesis that leasing is beneficial for corporations by observing 2,343 public companies listed on the London Stock Exchange; this method is similar to that which Sharpe and Nguyen (1995) employed. The study yielded 14,101 cross-sectional observation from 1 January 1989 to 31 December 2002. The study tests this hypothesis by illustrating to what extent the propensity to lease depends on i) tax considerations, ii) agency costs, iii) leverage and iv) efficiency.

Ezzell and Vora (2001) is closely related to Sharpe and Nguyen (1995) and makes use of the same data collection method. The authors obtained their information on sale-and-leaseback and direct leases from the Dow Jones Interactive service for the period between 1984 and 1991. The data was collated by way of identifying all articles which contain the word lease, leaseback, leasing, or sale and leaseback and then collating these articles to identify the lessee, the lease type and the type of asset leased. The hypothesis was tested and established: equity values of a business increase when a sale and leaseback is announced as appose to no change in equity values when direct leases are announced. Further to this hypothesis, the findings of Ezrell and Vora (2001) also supported the tax-saving, saving in bankruptcy costs, cost of asymmetric information, cost of moral hazard hypotheses (Ezzell & Vora, 2001). Research that is worth mentioning which employed the same method is Ang and Peterson (1984); Allen, Rutherford and Springer (1993), and Brounen and Eichholtz (2005). Again, we do not think that this method is sufficient to test the hypothesis of this dissertation since the information that is

extractable from sources such as the integrated statements of each listed retailer will not yield sufficient data to comprehend how retailers approach the acquisition of distribution centres and warehouses in South Africa.

3.2.2.2 *Structured equations modelling*

Miller and Upton (1976) relied on a structured equation modelling research method to disprove the presumption, found in financial literature, that financial equivalence endures when a lease-versus-buy neoclassical analysis is undertaken which specifically deals with uncertainty.

3.2.2.3 *Surveys*

Surveys and questionnaires are considered best-suited in answering the question of this dissertation. The question in both Redman and Tanner (1991) and Barkham and Park (2011) are answered by employing a survey as a data-gathering instrument. The question in both of these articles is aligned with the question that this dissertation attempts to answer, with the exception that Redman and Tanner (1991) is confined to CRE in the United States and Barkham and Park (2011) focuses on CRE in the United Kingdom. Our study focuses on distribution centres and warehouses (part of CRE holdings) among JSE listed retailers in South Africa.

Redman and Tanner (1991) attempt to determine which financing and decision methods are used by CRE executives in acquiring CRE. The questionnaire, the data-instrument, consisted of twenty-three questions concentrating on five areas: i) characteristics of the corporation, ii) CRE financing methods, iii) analytical method used to evaluate lease-versus-buy decision, iv) sale-and-leaseback structures and the analysis thereof, and v) tax-deferred exchanges. These questionnaires were distributed to one thousand two hundred members of the International Association of Corporate Real Estate Executives and the Industrial Development Council of which there was a response rate of 18.2%. The members of both these bodies represent most industries in the United States. The survey was conducted anonymously to encourage response. The outcome of the survey provided insight into i) how corporations employ financing techniques, ii) the level of sophistication of a corporation's analysis, iii) the propensity to lease rather than own which is considered an off-balance sheet financing mechanism, iv) how a discount rate is determined to evaluate the net advantage of leasing, v) the propensity of corporations' to implement sale-and-leaseback arrangements and the application of the proceeds, vi) which industries prefer leasing above ownership of CRE, and vii) how the size of a business influence the lease-versus-buy decision (Redman & Tanner, 1991).

Barkham and Park (2011) employed the same method as Redman and Tanner (1991); the data from a survey conducted in 1998 on 2,248 CRE occupiers in the United Kingdom underpinned the foundation of the research. The primary purpose of the questionnaire was to collect data on the requirements of industrial real estate occupiers relating to property management issues. The questionnaire was mailed to over 2,000 industrial zoned real estate occupiers. The response rate was 11 per cent. While the main purpose of the survey was not directly associated with Redman and Tanner (1991), a subsection of the questionnaire related to ownership of CRE. The questions concerning CRE tenure choice provided sufficient data for their paper. The paper aimed to present evidence that the lease-versus-buy decision does not strictly rely on financial considerations, but also consider other strategic determinants for CRE in the United Kingdom. A logistic regression analysis was performed on the data extracted from the survey owing to the binary nature of the dependant variable. Regression analysis attempts to predict how independent variables influence the dependent variable. Their theory is that the probability of industrial real estate ownership in Britain is a function of a vector of many factors in the lease-versus-buy decision.

The study of Barkham and Park (2011) confirmed their hypothesis that even though a financial framework for analysing a CRE lease-versus-buy decision is very important, other strategic factors are also deemed of equal significance. These factors include location, size of operations, physical characteristics of the real estate, company size and company policy. Some earlier literature has argued that owning CRE negatively affect a corporation from a financial perspective which, according to Barkham and Park (2011), support the implication that corporations cannot solely rely on financial factors when considering the lease-versus-buy decision. This paper demonstrates, however, that further research is required.

The advantage of a survey, as illustrated by the two papers referred to above, is that it creates a robust study that can provide reliable and useable data that can justify statistically inference of a population. A survey does, however, limit the information that is presented since it is confined to a predetermined set of questions and associated answers and no other information outside of this framework is considered – such as open-ended answers to questions in an interview.

3.2.3 Mixed method

Some researchers use a combination of qualitative and quantitative methods to attempt to answer their research question or to prove or disprove a hypothesis. Ling, Nur Lesya Firsya

Johaimi (2012) made use of such a mixed-method where primary and secondary instruments were used to gather data. The primary data includes interviews and surveys while secondary data were collected from annual reports, online journals, websites, reference books and newspapers.

3.3 Research Methodology

This research expedition starts with asking *"what financial and non-financial determinants drive South African Retailers' decision to lease or buy their warehouses and distribution centres?*"

In answering this question, we reviewed the existing literature to determine which methodology is best suited to answer this question. Most research is categorised as either a quantitative-, a qualitative- or mixed methodology (a combination of qualitative and quantitative); where each methodology caters for a specific need or strategy (Creswell, 2014). Not much empirical evidence exists in the literature which answers this dissertation's question from an international perspective and also places an emphasis on the listed retail environment in South Africa. Barkham and Park (2011) and Redman and Tanner (1991) research is closest related to this dissertation purpose and therefore it is deemed appropriate to consider the research methodology employed in their study to derive an answer to this dissertation's question.

Quantitative data collection methods are relatively fast and expedient in comparison to qualitative data collection (Onwuegbuzie & Johnson, 2004). Further to this, this method can make use of explanatory models which indicates whether a phenomenon might occur within certain parameters or conditions but fails to provide insight into why such a phenomenon might occur and why certain relationships exist (Libarkin & Kurdziel, 2002). Qualitative research does, however, provide such insight based on the nature of the research. It is also interpretative in nature and consequently rich in detail (Libarkin & Kurdziel, 2002; Onwuegbuzie & Johnson, 2004). There's an argument to be made that research should utilise a mixed method since one can capitalise on the strengths of both methodologies. However, the use of a mixed-method is costly, laborious, complicated and the researcher should have a good understanding of how to mix them appropriately (Onwuegbuzie & Johnson, 2004).

The chosen methodology in this dissertation is a quantitative approach which is considered a numbers-based research discipline which strongly relies on measurable attitudes, behaviour and performance which can be objectively interpreted. Quantitative research frequently yields

data that is considered sufficient to extrapolate to a greater population (Goundar, 2012). The quantitative research framework is based on a positivistic paradigm which is characterised by its objectivist and scientific nature and leads to empirical findings. Therefore, the ontological position of this paradigm is that there is only one unbiased reality that exists independent of human perception, i.e. objectivist. The positivism epistemology of this dissertation regard the researcher and researched to be independent entities; the phenomenon at hand can be studied without influencing or being influenced by it (Guba & Lincoln, 1994).

The data-collection instrument that will be employed is an online-based survey that intends to yield sufficient quantitative data to answer this dissertation's question. The Fisher's Exact test will be used to test the null hypothesis (H_0) that two variables are independent of each other. Should the null hypothesis be disproved, the alternate hypothesis (H_1) will be accepted; that there exists a relationship between two variables. Likert-scale data is analysed using descriptive statistics and the mean can be calculated to illustrate central tendencies and standard deviation for variability (Boone Jr & Boone, 2012).

3.4 Research Design

Survey research appeals to many academics as it is relatively fast, straightforward and inexpensive; however, it should be given the same due attention as other quantitative methods enjoy. A survey approach requires careful planning, thorough execution and the ability to produce reliable, supportive conclusions. The term "survey" and a "questionnaire" are commonly used interchangeably, although they are not synonymous. From a terminology perspective, one should understand the difference between the two: a questionnaire is an instrument used in survey research that involves a sequence of questions whereas a survey is, from the purist perspective, sampling of any value from a larger population (Shankar et al., 2018). It should, therefore, be clear that this dissertation will focus on a questionnaire-based survey research method. The questionnaire-based survey is process is outlined in Figure 1.

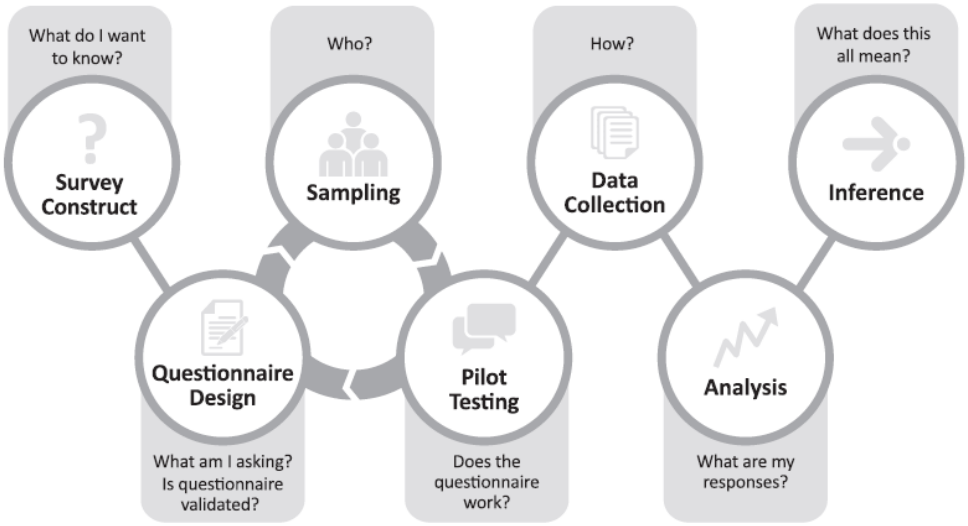

Figure 1: Questionnaire-based survey research flow diagram (Shankar et al., 2018)

The propensity exists for descriptive and explanatory research to be undertaken by way of a survey method which allows for the collection of quantitative data, analysis thereof using descriptive or inferential statistics and the identification of a correlation between the independent and dependant variables (Saunders, 2015). The main disadvantage of survey research is i) the rigidity of surveys, ii) inadequacy in providing underlying meaning within the data, iii) low response rate and iv) poor data attributed to incomplete questionnaires (Onwuegbuzie & Johnson, 2004).

3.5 Population of the Study

The population of this research study comprise of property/CRE or Supply Chain executives, or decision-makers, of retailers listed on the Johannesburg Stock Exchange. The respondents of the study are limited to i) South African based corporations, ii) JSE listed public companies, iii) Retailers within the following categories: a) Textiles, clothing, footwear and leather goods; b) Pharmaceutical and medical goods cosmetics and toiletries; and c) Household furniture, appliances and equipment, d) General dealers and e) Food, beverages and tobacco in specialised stores: and iv) Either lease or own their property from which they conduct the business. The questionnaire-based research method employed in this dissertation avoids face-to-face interaction and therefore the COVID-19 pandemic will not materially influence the ability to access these respondents.

3.6 Data Collection

Data collection in this study relies on a questionnaire containing 35 questions relating to financial- and non-financial determinants of the lease-versus-buy decisions with respect to CRE more specifically distribution centres and/or warehouses. The questionnaire is based on that which Redman and Tanner (1991) and Barkham and Park (2011) used in their research as well as the adapted questionnaire used in Avivi (2017) research report. The questionnaire is adapted to fit into the listed retail environment in South Africa with an emphasis placed on distribution centres and warehouses - part of a retail company's Corporate Real Estate portfolio. The questionnaire covers six broad themes: i) characteristics of the companies, ii) financial and non-financial determinants which influence the lease-versus-buy decisions, iii) acquisition methods (including financing mechanisms), iv) financing technique criteria, v) sale and leaseback arrangements and vi) COVID-19's impact on the lease-versus-buy decision (Barkham & Park, 2011; Redman & Tanner, 1991).

The data collected is primary data since it is obtained directly from the source by utilising a questionnaire-based survey. The research-process was confronted with a challenge in obtaining the requisite number of responses that would ensure that the research-project and method is robust enough to make certain inferences. During the process of collecting data, we found that listed retailers make use of central property divisions that are involved in the decision-making process of investing in CRE. This provided an interesting insight into how these companies go about deciding to invest in CRE but also posed a challenge from a purist view when analysing data and making inferences.

3.7 Data Collection Challenges

We initially set out to collect data from only three of the retail categories described by STATSSA, namely: i) pharmaceutical and medical goods, cosmetics and toiletries; ii) textiles, clothing, footwear and leather goods; and iii) household furniture, appliances and equipment. The retailers listed on the JSE that fall within these three categories include 11 retail-holdings companies:

1. The Foschini Group;
2. Pepkor;
3. Edcon;
4. Woolworths Holdings;
5. Truworths International Ltd;
6. Mr Price Group;

7. Rex Trueform Clothing Company Ltd
8. Clicks Group;
9. Dischem Group;
10. Massmart Holdings Limited
11. Lewis Group Ltd

The retail groups listed above include 78 brands which make up 90.7% of the South African retail market share within these three mentioned categories[1]. It would not have been prudent to include each of the 78 brands in the survey since we found that the decisions regarding the investment in CRE is not taken at the level of the brands, but rather taken on a holdings company level. Therefore, the inclusion of each of the brands within the survey would have yielded skewed data. The relevant property decision-makers were therefore approached to complete the questionnaire. We believe that the responses provided by these decision-makers would represent what pertains to the different brands within their group.

Even though the 11 represented retail-groups are significant in revenue and market share, the analysis of their responses posed a challenge due to the small number of respondents. A decision-maker in either the property- or supply-chain division of each of the 11 companies were approached telephonically to enquire whether they will be willing to participate in this survey. Following the telephonic discussion, an email was sent with a link to the questionnaire for completion. Each indicated that they are willing to participate in the research, although only 10 questionnaires were completed. The low response contributed to a further challenge in undertaking an analysis of the data.

In overcoming this challenge, the research was broadened to include an additional two retail categories as defined by (STATSSA, 2020):

Category	**Type of retail trade**
General dealers:	Non-specialised stores with food, beverages and tobacco predominating; and 'Other'retail trade in non-specialised stores.
Retailers in food, beverages and tobacco in specialised stores:	Fresh fruit and vegetables; Meat and meat products; Bakery products; Beverages; Tobacco; and 'Other'food in specialised stores.

[1] The market share was calculated on the 2019 financial year STATSSA data and compared to the financial annual financial statements of each group as published on their websites (STATSSA. 2020. *Retail trade sales (Preliminary)*. Pretoria.

Table 3.1: Additional retail categories included in the research (STATSSA, 2020)

The inclusion of these retail categories resulted in the inclusion of i) Shoprite Holdings, ii) Pick n Pay stores limited, and iii) Spar group. **Table 3.1**and **Table 3.2** below show all the retail groups (holding companies) and their associated brands which were included after the first set of data was collected. The research now included 14 retail groups which consist of 101 different brands. The combined market share of the 14 retail-groups is 72.2%[2] of which the revenue is R621,328,000,000.

The retailers approached in the first instance were approached again to complete the survey as well as the three additional retailers. The responses increased to 10 and therefore created a more acceptable data-set. From a purist perspective, the data-set remain too small to conduct a robust data analysis and therefore the outcome will include a caveat that suggests that further research is recommended.

[2] The market share is based on the financial statements of the 14 companies for the year 2019 and compared to the retail sales published by STATSSA ibid.

Holding Company	Retail Brand
Shoprite Holdings (JSE: SHP)	Shoprite OK Furniture OK Foods Usave Checkers Checkers Hyper Shoprite Liquor Shop Checkers Liquor Shop Medirite House & Home Freshmark Hungry Lion
Woolworths Holdings (JSE: WHL)	Woolworths Food Woolworths Country Road Trenery
The Foschini Group (JSE: TFG)	Donna @Home @Home Livingspaces American Swiss Archive Charles & Keith Colette Exact Fabiani The Fix Foschini G-Star Raw Hi Markham Mat & May Soda Bloc Sportscene Sterns Totalsports
Truworths International Ltd (JSE: TRU)	Truworths Truworths Man LTD Kids LTD Identity YDE Uzzi Loads of Living Office London Elements Earth Child Naartjie Kids Essence Emily Moon Ginger Mary Earthaddict Daniel Hechter
Spar Group (JSE: SPP)	Superspar Spar Kwikspar Spar Express Tops Spar SaveMor Build it Spar Pharmacy
Edcon (JSE: EDGR)	Edgars Jet Edgars Active
Pepkor Holdings (JSE: PPH)	Pep Stores Ackermans Tekkie Town Dunns John Craig Refinery Shoe City Russels Sleepmasters Rochester Incredible Connection HiFi Corporation SPCC Bradlows
Lewis Group Ltd (JSE: LEW)	Lewis Best Home and Electric Beares United Furniture Outlets
Pick n Pay Stores Limited Group (JSE: PIK)	Pick n Pay Pick n Pay Clothing Boxer
Mr Price (JSE: MRP)	Mr Price Mr Price Home Mr Price Sport Miladys Sheet Street
Clicks Group (JSE: CLS)	Clicks GNC The Body Shop Claire's Musica
Rex Trueform Clothing Company Ltd (JSE: RTN)	Queenspark
Massmart Holdings Limited (JSE: MSM)	Makro Dion Wired Game Cambridge Foods The Fruitspot Rhino Cash and Carry

Table 3.2: List of the retail groups and their associated brands included in the research[3]

[3] Obtained from company websites and annual integrated reports

3.8 Sampling

The dissertation focus on retailers in South Africa which have the scale to justify the use of dedicated warehouses and distribution centres for their operations. The focus was, therefore, placed on listed retailers as these companies are generally larger in terms of revenue and operations when compared to smaller, independent retailers. Further to this, the dissertation only considered retailers in five of the seven categories as defined by STATSSA; retailers in hardware, paint and glass, as well as "other", were excluded from the research since their operational requirements in terms of distribution centres and warehouses differ from those of the five preceding categories. **Table 3.3** below illustrates how the different categories are made up:

Number	Category	Type of retail trade
1	General dealers:	Non-specialised stores with food, beverages and tobacco predominating; and 'Other'retail trade in non-specialised stores.
2	Retailers in food, beverages and tobacco in specialised stores:	Fresh fruit and vegetables; Meat and meat products; Bakery products; Beverages; Tobacco; and 'Other'food in specialised stores.
3	Retailers in pharmaceutical and medical goods, cosmetics and toiletries;	
4	Retailers in textiles, clothing, footwear and leather goods:	Men's and boys' clothing; Ladies', girls' and infants' clothing; General outfitters; and Footwear.
5	Retailers in household furniture, appliances and equipment;	

Table 3.3: Retail categories (STATSSA, 2020)

3.9 Data Analysis & Findings

The type of data obtained from the questionnaire includes both quantitative- and qualitative data and the level of data also includes all four level: nominal, ordinal, interval and ratio. In this study, we use statistical tests of independence to determine whether there is a significant relationship between the different financial and non-financial variables or factors and the decision to lease or buy warehouses or distribution centres. Descriptive statistics are also used to provide further clarification.

The most common test of independence is Pearson's chi-square test. Pearson's chi-square test is applicable when one attempts to conclude whether the sample data is consistent with the hypothesized distribution in which case the null hypothesis is not rejected or in the case when the chi-square value does not exceed the critical value, the null hypothesis is rejected. The chi-

square test requires that the variables are independent and that the sample size is sufficient and contain the minimum expected cell counts; each variable's contribution to the data-set should be independent of the other variables which make up the overall count and each case must have a minimum expected cell count of five. The chi-square is primarily used for the comparison in the following two circumstances: i) a test of goodness of fit or ii) test of independence. The limitations of the chi-square test are in the application of the test: i) the absence of independence among variables tested, ii) a small number of theoretical frequencies, iii) non-frequent data utilisation, and iv) incorrect degree of freedom calculation (Frey, 2018; Lin, Chang & Pal, 2015). During this research endeavour, we were confronted with the limitation of the small number of frequencies hence the decision to consider an alternative method of analysis, which is the Fisher's Exact Test.

Both the Pearson's chi-square test and Fisher's exact test both test if the null hypothesis, that there is no significant relationship between two variables, should be accepted or refuted (Frey, 2018). The Fisher's exact test is referred to as an exact test as it ascertains exactly the difference from the null hypothesis or no difference hypothesis whereas the Pearson chi-square test is an approximation. Since Fisher's exact test is more accurate than the chi-square test, this test is best suited for tests involving small sample sizes (Connelly, Lynne, 2016). The computation of the Fisher's exact test used to be challenging and therefore it was traditionally applied to two-by-two contingency tables (r x c), but since computers have been used to compute the test, larger tables have been used (Hess & Hess, 2017).

3.10 Clarification of Chosen Research Methodology

The dissertation primarily drew inspiration from the research conducted by Barkham and Park (2011) and Redman and Tanner (1991) and as a consequence, their methodological imperative created a framework for this dissertation's considerations. Barkham and Park (2011) implemented a regression model for their research paper whereas Redman and Tanner (1991) made use of descriptive statistics. This section of the dissertation intends to provide clarity as to why the chosen methodology did not consider a regression analysis model.

3.10.1 Sample size

The dissertation originally aimed to cover 78 listed South African retailers who operate in three retail categories and makeup 90, 70% of the South African retail market. However, we found that these retailers operate under 11 holding companies with the corporate real estate decisions made at a holding company, or group, level. The retail companies themselves are referred to as brands and henceforward they shall be considered as such. We, as clarified in the preceding section, expanded the sample size to include 101 different brands which fall under 14 retail groups. This dissertation noted the data collection challenges and suggested that "*from a purist perspective, the data-set remain too small to conduct a more robust data analysis and therefore the outcome will include a caveat that suggests that further research is recommended".*

Owing to the low number of respondents, the analysis of variance and logistic regression analysis used in Redman and Tanner (1991) and Barkham and Park (2011) respectively are considered not suitable for use in this dissertation. Table 1 shows the sample size comparison between Redman and Tanner (1991), Barkham and Park (2011) and this dissertation:

	Redman and Tanner (1991)	Barkham and Park (2011)	Current Dissertation
Sample Size (responses)	218 of 1200	2248 of 20 000	10 of 14

Table 3.4: Sample Size Comparison (Jh, 2014)

An analysis of variance used in Redman and Tanner (1991) requires a minimum sample size of 30 and the sample size of this dissertation is 10 and therefore an analysis of variance could not be employed Ross and Willson (2017).

Logistic regression analysis, as employed by Barkham and Park (2011), requires a relatively large sample size to justify proper statistical inferences (Bagley, 2011) and this dissertation's sample size cannot be construed as a large sample, but rather a small sample.

3.10.2 Method of Analysis

Redman and Tanner (1991) employed descriptive statistics, as well as the analysis of variance, to analyse and conclude their research, whereas Barkham and Park (2011) made use of a logistic regression model. Even though the said research papers provided a framework for an appropriate analysis model to be developed, this dissertation's analysis model was limited by the nature of data collected for this research as well as the sample size.

The Pearson Chi-Square test was proposed for use in this study. The chi-square test is a test of association between categorical variables which has been used extensively in the medical and other fields to determine the association (Nowacki, 2017). Recently, this test has been used in the study of the COVID-19 disease (Al-Najjar, Al-Najjar & Al-Rousan, 2020; Lau et al., 2020; Liu et al., 2020). The goal of the chi-square test is to test whether two variables are associated with each other. The null hypothesis of this test is that there is no association between the two variables whiles the alternative hypothesis is that there is an association between these variables. As indicated in Chapter 1, this study aims to determine the factors that are significant in the lease/buy decision of SA listed retailers, in respect of warehouses/distribution centres. Several financial and non-financial variables are tested to see whether they are significantly related to the decision to buy/lease warehouses. The generic form of the null hypothesis was translated into the following form for each financial and non-financial variable:

H_0: There is no association between Factor X and the decision to lease or buy a warehouse/distribution centre.

It is important to note that although the chi-square test is a test of association, it does not measure the magnitude of association. Another limitation is that the test does not work well with small sample sizes. The chi-square test has been found to be inaccurate when the data size is not large enough. Although there is no generally accepted rule, McDonald (2014) suggests the chi-square test should be used only when the sample size is greater than 1,000. The Yates Continuity Correction is one of the techniques that has been employed to make the chi-square approximation better.

An alternative approach, the Fisher's Exact Test of Independence. This test is called an exact test because it is able to test the deviation from a null hypothesis that can be calculated more accurately (Connelly, Lynne M, 2016). Although the Fisher's Exact Test tests the null hypothesis of independence, it still does not say anything about the magnitude of the difference. For example, the Fisher's Exact test can tell that someone is likely to contract a disease if

certain conditions are present but cannot tell how sick the person would become. Notwithstanding, the test is still very useful in identifying the variables that are linked to a particular outcome.

3.10.3 Nature of Variables Analysed

Another important point to note is that Barkham and Park (2011)'s questionnaire produced binary variables and therefore a logistic regression technique was used to explore and test the data. The questionnaire and answer developed in this dissertation were, however, not binary and therefore it would not be appropriate to employ the same technique employed by Barkham and Park. One can argue that the data can be collapsed into categories to render it binary, but that would result in the loss of valuable information and nuances as well as possibly introducing a bias (Murad et al., 2003).

The maximum likelihood estimation of the Logistic Regression Model is also quite prone to small-sample bias (King & Zeng, 2001; Nemes et al., 2009). Mehta, Patel and Senchaudhuri (2000) found that the maximum likelihood produces poor results when data is sparse or unbalanced.

3.11 Pilot Study

A pilot study was conducted with a property executive of one of the leading JSE listed retailers to investigate the legitimacy and practicality of the questions. The pilot study involved a discussion of the questionnaire in principle but did not involve the completion of the questionnaire. The result is that some questions were adapted to better suit the respondents.

Table **3.5** below provides a summary of the adapted questions from Redman and Tanner (1991) and Barkham and Park (2011) in line with the outcome of the pilot study.

Table 3.5: Questionnaire adaption from Redman & Tanner (1991) and Barkham & Park (2011)

Previous research Questionnaires:				Adapted Questionnaire	Reason for change/omission
Redman & Tanner 1991		**Barkham & Park 2011**			
Question number:	Relevance	Question number:	Relevance		
N/A		1	Site location	Does the location of a Distribution Center and/or Warehouse influence the decision to lease or buy the property?	Real Estate changed to include Distribution Centres and Warehouses only.
N/A		2-7	Site location	If yes in previous question, rank the following site location factors influencing your decision to lease or buy Distribution Centres and/or Warehouses	Adapted the questionnaire to rank the factors. This is to provide insight into the importance of non-financial factors
N/A		12-18	Physical attributes of the building	Does the physical attributes (e.g. size, eave height, etc.) of a Distribution Centre and/or Warehouse influence the decision to lease or buy the property?	Adapted the questionnaire to rank the attributes. This is to provide insight into the importance of attribute.
N/A		12-18	Lease or Buy preference	Does the financial position of your company influence the decision to lease or buy Distribution Centres or Warehouse?	Real Estate changed to include Distribution Centres and Warehouses only.
N/A		27	Lease or Buy preference	Does the company policy lean towards ownership of Distribution Centres rather than leasing	Real Estate changed to include Distribution Centres and Warehouses only.
N/A		12-18	Lease or Buy preference	Does the local real estate market conditions influence the decision to lease or buy Distribution Centres and/or Warehouses?	Real Estate changed to include Distribution Centres and Warehouses only.
1	Sector classification	25 & 26	Sector classification	Which retail category best describes your company	Only retail corporations will be included in the data collection and therefore question should be specific to retail and not consider other industries
2	Company size: measured as the book value of assets (Dollar)	N/A		What is the approximate market capitalisation of the company you represent?	The market cap of a firm is deemed a better unit of measurement since it is a common metric used for JSE listed companies
N/A		19 - 24	Company size: measured in people employed	What is the number of staff employed by your company?	
3	Value of Real Estate Investment made in the last fiscal year (Dollar)	N/A		What is the value of Distribution Centres/Warehouses that your company has invested in over the last fiscal year (expressed in Rand)	Real Estate changed to include Distribution Centres and Warehouses only. Also, Dollar changed to Rand
4	Real Estate Acquisition: Financing mechanisms	N/A		How does your company finance the Distribution Centres and/or Warehouses it acquires - which could be interpreted as lease or buy (select all applicable boxes)?	Real Estate changed to include Distribution Centres and Warehouses only.

Previous research Questionnaires:				Adapted Questionnaire	Reason for change/omission
Redman & Tanner 1991		**Barkham & Park 2011**			
Question number:	Relevance	Question number:	Relevance		
5	Leasing propensity	N/A		Does your company lease any Distribution Centres and/or Warehouses?	Real Estate changed to include Distribution Centres and Warehouses only.
6	Approximate percentage of leases	N/A		What is the approximate percentage of Distribution Centres and/or Warehouses leased?	Real Estate changed to include Distribution Centres and Warehouses only.
7	Benefits of leasing Real Estate (check all applicable)	N/A		Rank the following factors that influenced the company's decision to lease Distribution Centres and/or Warehouses	Real Estate changed to include Distribution Centres and Warehouses only. Off-balance sheet option excluded since it is no longer applicable with the introduction of IFRS16
8	Lease structure	N/A			Omitted: No longer applicable after the introduction of IFRS16
9	Lease mortgage	N/A			Omitted: Not relevant
10	Lease mortgage percentage	N/A			Omitted: Not relevant
11	Purchase option in a lease	N/A		If your company leases Distribution Centres/Warehouses, does your agreement make provision for a purchase option	Real Estate changed to include Distribution Centres and Warehouses only.
12	Purchase option exercised	N/A		Has your company ever exercised such an option	
13	Percentage of purchase options exercised	N/A		What is the percentage of the purchase options exercised?	
14	Lease-versus-buy quantitative analysis	N/A		What quantitative methods are used to evaluate the alternatives of leasing versus buying Distribution Centres/Warehouses	Real Estate changed to include Distribution Centres and Warehouses only.
15	The discount rate in DCF analysis	N/A		In using a Discounted Cash Flow method to decide whether to lease or buy Distribution Centres and/or Warehouses, what is used as a discount rate?	Real Estate changed to include Distribution Centres and Warehouses only.
16	Leased Properties: Buy evaluation assessment first followed by the alternative assessment	N/A		For the Distribution Centres/Warehouses that might be leased, do you evaluate the decision to acquire the property first and then evaluate the alternatives of leasing versus buying the property?	Real Estate changed to include Distribution Centres and Warehouses only.

Previous research Questionnaires:				Adapted Questionnaire	Reason for change/omission
Redman & Tanner 1991		**Barkham & Park 2011**			
Question number:	Relevance	Question number:	Relevance		
17	Sale-and-leaseback arrangements	N/A		Has your company used sale-leaseback arrangements on any of its Distribution Centres/Warehouses	Real Estate changed to include Distribution Centres and Warehouses only.
18	Percentage of sale-and-leaseback	N/A		What percentage of your firm's Distribution Centres/Warehouses involved the use of sale and leaseback transaction?	Real Estate changed to include Distribution Centres and Warehouses only.
19	Advantages of sale-and-leasebacks	N/A		What have been the advantages of using these sale-leasebacks arrangements? (Check all that apply)	Real Estate changed to include Distribution Centres and Warehouses only.
20	Sale-and-leaseback evaluation method	N/A		What methods are used to evaluate whether a sale-leaseback arrangement should be used?	Real Estate changed to include Distribution Centres and Warehouses only.
21	Sale-and-leaseback structure	N/A			Omitted: Not relevant
22	Tax-deferred exchanges				Omitted: Not relevant
23	Tax-deferred exchanges percentage				Omitted: Not relevant
New question: Added to existing questions:					
a				Is your company listed on the Johannesburg Stock Exchange	
b				Which of the following factors are important in your decision to own Distribution Centres (Check all that apply)	Real Estate changed to include Distribution Centres and Warehouses only. (Avivi, 2017)
c				Rank the following factors that influenced the company's decision to own Distribution Centres and/or Warehouses	Real Estate changed to include Distribution Centres and Warehouses only. (Avivi, 2017)
d				Do you make use of external consultants in your decision-making process to own Distribution Centres and/or Warehouses?	Real Estate changed to include Distribution Centres and Warehouses only. (Avivi, 2017)
d(i)				Which external consultants do you involve in making such a decision? (select all applicable boxes)	

Previous research Questionnaires:				Adapted Questionnaire	Reason for change/omission
Redman & Tanner 1991		**Barkham & Park 2011**			
Question number:	Relevance	Question number:	Relevance		
New question: Added to existing questions:					
e				Which of the following determinants were important in your decision to lease your Distribution Centres/Warehouses	Real Estate changed to include Distribution Centres and Warehouses only (Avivi, 2017)
f				What best describes your position in the company you represent?	
g				Does your company own any Distribution Centres and/or Warehouses?	
h				What is the approximate percentage of Distribution Centres and/or Warehouses owned?	
i				What is the value of the Distribution Centres and/or Warehouses that your company has invested in during the last financial year?	
j				Has the COVID-19 pandemic influenced your company's strategy in the lease-versus-buy decision when it comes to Distribution Centres and/or Warehouses?	
k				In the light of the COVID-19 pandemic, does your company lean towards leasing or owning Distribution Centres and/or Warehouses?	

3.12 Ethical Considerations

The foundation of this dissertation was designed utilising the highest ethical standard to ensure that valid, reliable and excellent results were provided. The confidentiality of each respondent was protected by way of implementing an anonymous questionnaire method with the intent to not only protect the individuals, but also the corporation they represent. This dissertation made no mention of any corporation or individual except where consent is granted and ethics

clearance is approved. Further to these considerations, the author ensured that no respondent completes the questionnaire under duress and by implication that the nature of their participation is voluntary. The author did not proceed with data collection without obtaining the requisite ethics clearance from UCT's ethics committee.

4. CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 Introduction

Chapter four provides insight into the data gathered from the questionnaire-based survey, the analysis thereof, as well as a discussion of the findings of each of the respective questions. This chapter also establishes whether the findings of this research meet the objectives set out in the preceding chapters. These objectives are i) determine what financial factors retailers consider in deciding if they should lease or buy their warehouses and distribution centres, ii) determine what non-financial factors retailers consider in deciding if they should lease or buy their warehouses and distribution centres, and iii) deduce which of the two determinants (financial and non-financial) is regarded as the more important.

This dissertation only considered five of the seven retail categories as defined by Statistics SA (STATSSA, 2013). The categories include i) general dealers, ii) food, beverages and tobacco in specialised stores, iii) textiles, clothing, footwear and leather goods, iv) pharmaceutical and medical goods, cosmetics and toiletries; and v) household furniture, appliances and equipment. Together, these make up 81.04% or R860.475billion of the *circa* R1.1trillion revenue (STATSSA, 2020). The reason two of the retail categories were omitted was that the distribution centre and warehouse requirements of retailers in the hardware and other category is different from that of the other five categories. Also, no JSE listed retailer can be categorised, primarily, as a retailer within the *hardware-* or *other* category.

Fourteen companies listed on the JSE were identified as falling within these five categories and were contacted to participate in this survey as described in the preceding chapter.

4.2 Results

4.2.1 Respondents profile

Of the fourteen companies, ten questionnaires were fully completed thus yielding a 71.43% response rate of which 50% comprised of retailers in the textiles, clothing, footwear and leather goods category and 20% in the household furniture, appliances and equipment category and 30% in the food, beverage and tobacco in specialised stores – see Figure 4.2. No response was received from any of the retailers which regard their primary retail business as pharmaceutical and medical goods, cosmetics and toiletries, which consequently creates an additional limitation to this research report.

The different corporations' real estate division heads were thought to be best suited to present the position of their respective companies when it comes to choosing whether to invest in distribution centres and warehouses. The data illustrated, as shown in Figure 4.1, that each representative of the respective corporations hold, as a minimum, a senior managerial position and therefore involved in the decision-making process regarding investing in distribution centres or warehouses. Of the respondents, 30% are senior managers, 60% are executives and the remaining 10% are directors. This data confirms that the correct managerial level in the organisational hierarchy was targeted and therefore the level of seniority, as well as their position concerning real estate matters, gives the requisite credibility to the survey data.

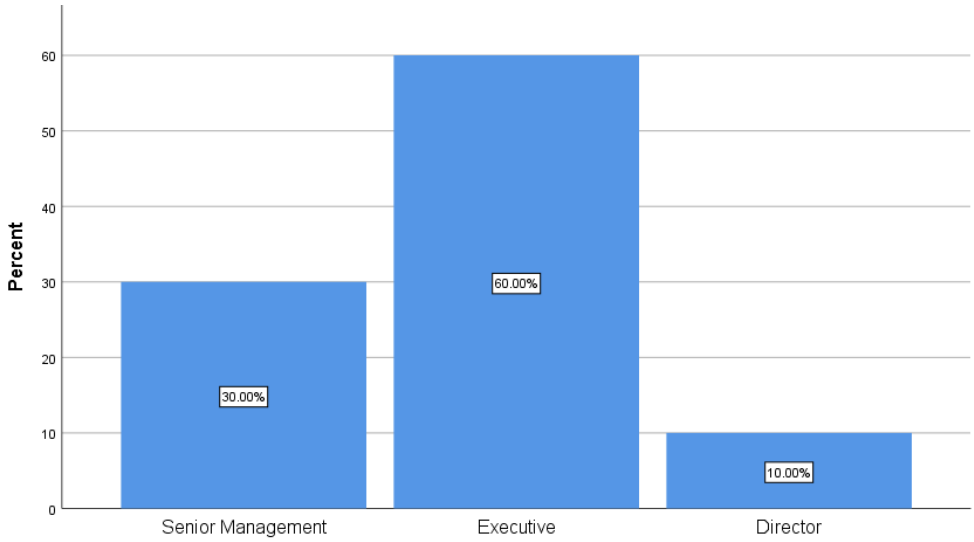

Figure 4.1 Company representative position

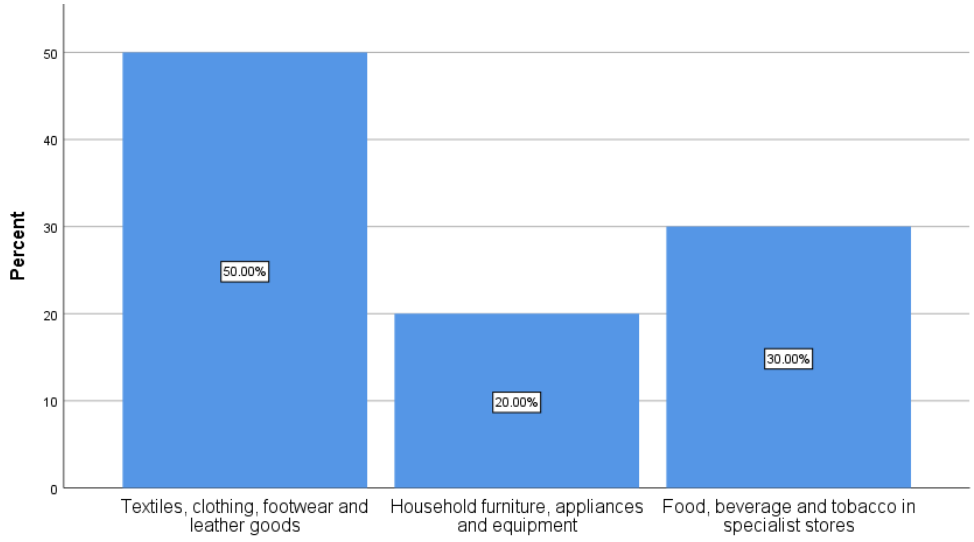

Figure 4.2: Retail category

The respondents' company size is expressed in approximate market capitalisation as well as the number of staff they employ. Figure 4.3 and Figure 4.4 show the size of each corporation in terms of market capitalisation and staff complement respectively. 20% of the respondents' market capitalisation ranges between R5billion and R10billion, 20% between R10billion and R30billion, 20% between R30billion and R40billion, 10% between R40billion and R50billion and the remaining 30% is more than R80billion.

The number of staff that these companies employ ranges from 5,000 to more than 80,000 and the distribution among the different categories are illustrated in Table 4.1 below.

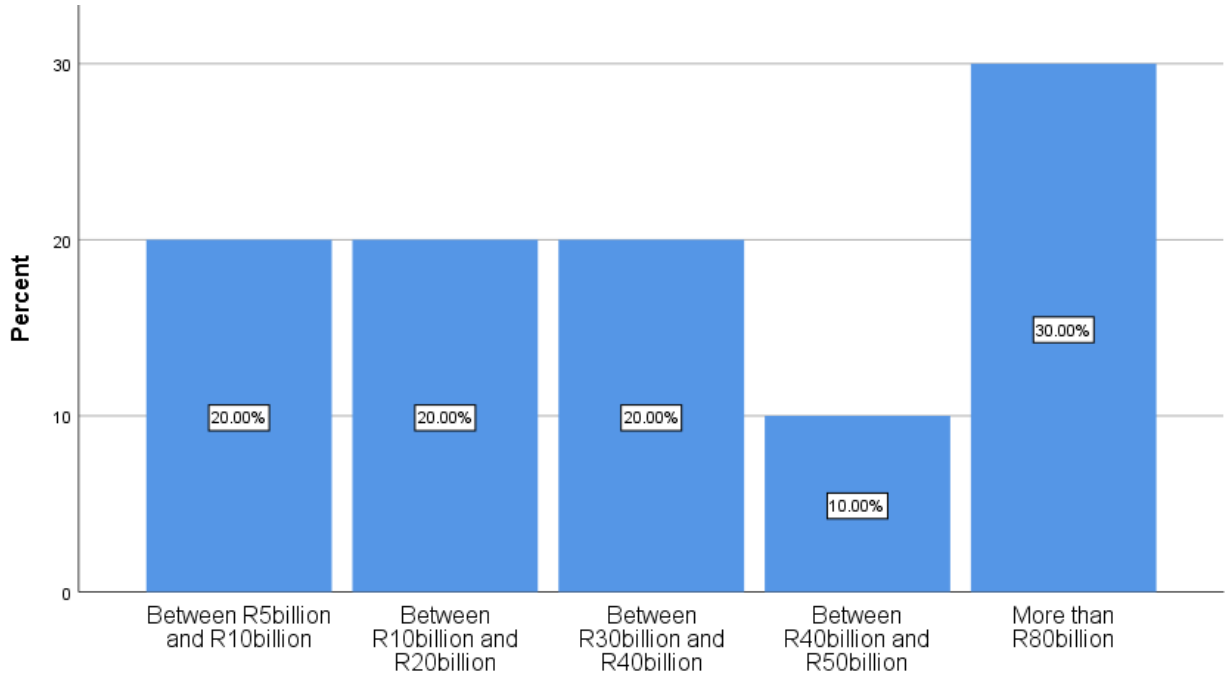

Figure 4.3: Market capitalisation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5001-10,000	1	10.0	10.0	10.0
	15,001-20,000	1	10.0	10.0	20.0
	20,001-30,000	3	30.0	30.0	50.0
	30,001-50,000	1	10.0	10.0	60.0
	50,001-80,000	2	20.0	20.0	80.0
	More than 80,001	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Table 4.1: Staff complement

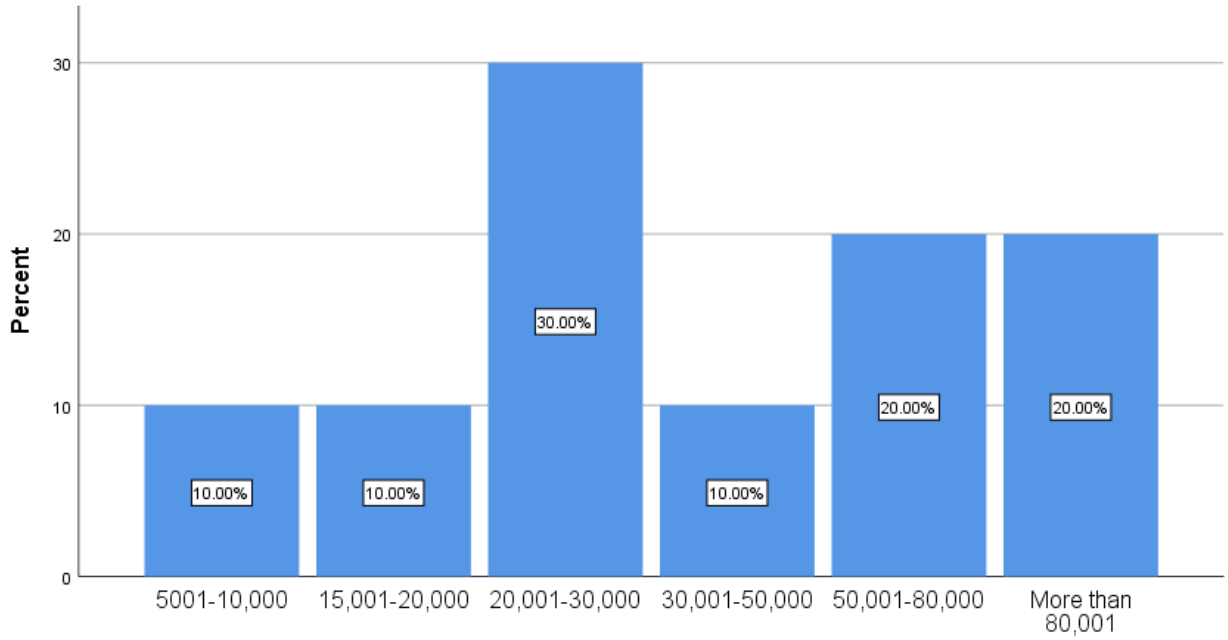

Figure 4.4: Staff complement

4.2.2 Corporate Real Estate financing methods

This survey demonstrates which of the multiple acquisition types (or financing methods) retailers consider when acquiring Corporate Real Estate, more specifically, distribution centres and/or warehouses. Even though many acquisition or funding methods exist, the data, as depicted in Figure 4.5 and Table 4.2, shows that there are but fours ways that SA retailers choose to acquire distribution centres or warehouses: 34.78% of the respondents utilise cash flow from operations, 21.74% draw from retained earnings, 39.13% enter into a long-term lease agreement and 4.35% enter into sale-and-leaseback agreements. None of the respondents makes use of joint-ventures, mortgage bonds, sale of common shares, preferred shares, unsecured bonds or commercial paper to acquire their distribution centres and/or warehouses. It should further be noted that 90% of the respondents (i.e. 9 of the 10) indicated that they will lease these kinds of CRE.

Figure 4.5: Acquisition/funding method

			Count	Table N %
Acquisition Method: All Questions	Mortgage bond secured by the acquired property	No	10	100.0%
		Yes	0	0.0%
	Retained Earnings	No	5	50.0%
		Yes	5	50.0%
	Cash flow from operations	No	2	20.0%
		Yes	8	80.0%
	Sale of common stock/shares	No	10	100.0%
		Yes	0	0.0%
	Sale of preferred stock/shares	No	10	100.0%
		Yes	0	0.0%
	Sale of unsecured bonds	No	10	100.0%
		Yes	0	0.0%
	Sale of commercial paper	No	10	100.0%
		Yes	0	0.0%
	Long-term leasing	No	1	10.0%
		Yes	9	90.0%
	Sale-and-Leaseback	No	9	90.0%
		Yes	1	10.0%
	Joint Venture	No	10	100.0%
		Yes	0	0.0%

		N	Responses Percent	Percent of Cases
Acquisition Method: Answered Questions	Retained Earnings	5	21.7%	50.0%
	Cash flow from operations	8	34.8%	80.0%
	Long-term leasing	9	39.1%	90.0%
	Sale-and-Leaseback	1	4.3%	10.0%
Total		23	100.0%	230.0%

Table 4.2: Acquisition/funding method

Table 4.3 illustrates the spread between the preferred funding or acquisition methods for each of the five relevant market capitalisation categories. The Fisher's Exact test was performed on the market capitalisation and acquisition method. The test aimed to test the following hypothesis:

- Null hypothesis (H_0): There is no relationship between the market capitalisation of a company and the method of acquisition they choose to employ
- Alternate hypothesis (H_1): There is a relationship between the market capitalisations of a company and the method of acquisition they choose to employ.

The null hypothesis (H_0) could not be rejected i.e. no relationship exists between the market capitalisation and the method of acquisition employed by each company as the ρ-value was higher than 0.05 (or 5%) – refer to Table 4.4 below.

			What is the approximate market capitalisation of the company you represent?					Total
			Between R5billion and R10billion	Between R10billion and R20billion	Between R30billion and R40billion	Between R40billion and R50billion	More than R80billion	
Acquisition/Funding Method	Retained Earnings	Count	0	2	1	1	1	5
		% within $AcquisitionMethod	0.0%	40.0%	20.0%	20.0%	20.0%	
		% of Total	0.0%	8.7%	4.3%	4.3%	4.3%	21.7%
	Cash flow from operations	Count	1	2	2	1	2	8
		% within $AcquisitionMethod	12.5%	25.0%	25.0%	12.5%	25.0%	
		% of Total	4.3%	8.7%	8.7%	4.3%	8.7%	34.8%
	Long-term leasing	Count	2	2	1	1	3	9
		% within $AcquisitionMethod	22.2%	22.2%	11.1%	11.1%	33.3%	
		% of Total	8.7%	8.7%	4.3%	4.3%	13.0%	39.1%
	Sale-and-Leaseback	Count	0	0	0	0	1	1
		% within $AcquisitionMethod	0.0%	0.0%	0.0%	0.0%	100.0%	
		% of Total	0.0%	0.0%	0.0%	0.0%	4.3%	4.3%
Total		Count	3	6	4	3	7	23
		% of Total	13.0%	26.1%	17.4%	13.0%	30.4%	100.0%

Percentages and totals are based on responses.

Table 4.3: Crosstabulation: Market Capitalisation & Funding method

Fisher's Exact Test: Market Capitalisation and Retained Earnings

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	4.794			.524		
N of Valid Cases	10					

a. 10 cells (100.0%) have expected count less than 5. The minimum expected count is .50.

Fisher's Exact Test: Market Capitalisation and Cash Flow from operations

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	3.133			1.000		
N of Valid Cases	10					

a. 10 cells (100.0%) have expected count less than 5. The minimum expected count is .20.

Fisher's Exact Test: Market Capitalisation and Long-term leasing

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	4.624			.700		
N of Valid Cases	10					

a. 10 cells (100.0%) have expected count less than 5. The minimum expected count is .10.

Fisher's Exact Test: Market Capitalisation and sale-and-leaseback

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	3.813			1.000		
N of Valid Cases	10					

a. 10 cells (100.0%) have expected count less than 5. The minimum expected count is .10.

Table 4.4: Fisher's Exact Test: Market capitalisation and Acquisition methods

Fisher's Exact test: Lease versus Owning						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test				.0999	0.700	
N of Valid Cases	10					

a. 3 cells (75.0%) have expected count less than 5. The minimum expected count is .30
b. Computed only for a 2x2 table
c. The standardized statistic is -.655

Table 4.5: Fisher's Exact test: Lease Versus Ownership

4.2.3 Ownership: What Influences the Decision to Own?

The data showed that 70% of the respondents own their distribution centres and the remaining 30% do not. The respondents that indicated that they do not own these properties were excluded from the ensuing paragraphs in this section of the report. Therefore, the following data only considers seven of the ten respondents. Among these participants, 42.9% own between 91-100% of these properties and the remaining 57.1% is equally divided between the categories ranging from 16% to 80% - refer to Table 4.8.

4.2.3.1 *Market Capitalisation*

The Fisher's exact test was used to test if there is a statistical significance between the size of a business (measured as market capitalisation) and the percentage of warehouses owned. The relationship between the two variables was tested using the Fisher's exact tests - Table 4.4 & Table 4.5. The ρ-value calculated is 0.167 and seeing that it is higher than the significance level of 0.05 which demonstrates that the null hypothesis (H_0) is not rejected; we conclude that no relationship exists between the market capitalisation and percentage ownership of warehouses and/or distribution centres. Furthermore, the number of investments made by those corporations during their last financial year can be seen in Table 4.11 below.

Does your company own any Distribution Centres and/or Warehouses?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	70.0	70.0	70.0
	No	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Table 4.6: DC and/or Warehouse ownership

		Does your company own any Distribution Centres and/or Warehouses?		
		Yes Count	No Count	Percentage Yes
Retained Earnings	Yes	5	2	71.43%
Cash flow from operations	Yes	6	1	85.71%

Table 4.7: Ownership acquisition methods

		Does your company own any Distribution Centres and/or Warehouses?		
		Yes Count	Total Count	Total Table N %
What is the approximate percentage of Distribution Centres and/or Warehouses owned?	16%-20%	1	1	14.3%
	21%-25%	1	1	14.3%
	26% - 30%	1	1	14.3%
	71% - 80%	1	1	14.3%
	91% - 100%	3	3	42.9%

Table 4.8: Percentage of DCs & Warehouses owned

Percentage of Distribution Centres and/or Warehouses owned * Approximate market capitalisation Crosstabulation

Count

		What is the approximate market capitalisation of the company you represent?					
		Between R5billion and R10billion	Between R10billion and R20billion	Between R30billion and R40billion	Between R40billion and R50billion	More than R80billion	Total
What is the approximate percentage of Distribution Centres and/or Warehouses owned?	0%	2	0	0	0	1	3
	16%-20%	0	0	0	0	1	1
	21%-25%	0	0	0	1	0	1
	26% - 30%	0	0	0	0	1	1
	71% - 80%	0	1	0	0	0	1
	91% - 100%	0	1	2	0	0	3
Total		2	2	2	1	3	10

Table 4.9: Percentage ownership and Market Capitalisation comparison

Fisher's Exact Test						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	23.410			.167		
N of Valid Cases	10					

a. 30 cells (100.0%) have expected count less than 5. The minimum expected count is .10.
b. The standardized statistic is -.727.

Table 4.10: Fisher's Exact test: Market capitalisation and Percentage owned

What is the value of the Distribution Centres and/or Warehouses that your company has invested in during the last financial year?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Nil	2	20.0	28.6	28.6
	less than R10million	1	10.0	14.3	42.9
	Between R10million and R50million	1	10.0	14.3	57.1
	Between R100million and R150million	1	10.0	14.3	71.4
	Between R200million and R250million	1	10.0	14.3	85.7
	Between R500million and R1billion	1	10.0	14.3	100.0
	Total	7	70.0	100.0	
Missing	System	3	30.0		
Total		10	100.0		

Table 4.11: Distribution centre and Warehouse investment

The data also indicated that only 40% of respondents made use of external consultants during their decision-making process in respect of owning distribution centres and/or warehouses. Furthermore, these respondents indicated that they make use of legal advisors (10%), business strategists (10%), commercial real estate consultants (10%), investment consultants (10%) and the majority make use of property developers (30%).

4.2.3.2 *Retail category*

The null hypothesis was tested using the same principles and the outcome is summarised in Table 4.12 below.

Which retail category best describes your company? * Does your company own any Distribution Centres and/or Warehouses? Crosstabulation

		Does your company own any Distribution Centres and/or Warehouses?		
		Yes	No	Total
Which retail category best describes your company?	Textiles, clothing, footwear and leather goods	5	0	5
	Household furniture, appliances and equipment	0	2	2
	Food, beverage and tobacco in specialist stores	2	1	3
Total		7	3	10

Fisher's Exact test: Retail categories & Ownership

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	5.725			.033		
N of Valid Cases	10					

a. 6 cells (100.0%) have expected count less than 5. The minimum expected count is .60.

Table 4.12: Fisher's Exact test: Retail categories and Ownership

The results of the Fisher's exact test yielded a ρ-value of 0.033 which was found to be less than the significance level of 0.05; we thus reject the null hypothesis (H_0). This implies that a relationship exists between the retail categories and whether a company owns its distribution centres and/or warehouses.

The same test, the Fisher's exact test, was executed to determine if a relationship exists between the retail category and the percentage of DCs and/or warehouses owned. The test fails to reject the null hypothesis since the ρ-value of 0.286 was more than the significance level of 0.05.

Which retail category best describes your company? * What is the approximate percentage of Distribution Centres and/or Warehouses owned? Crosstabulation

		What is the approximate percentage of Distribution Centres and/or Warehouses owned?					
		16%-20%	21%-25%	26% - 30%	71% - 80%	91% - 100%	Total
Which retail category best describes your company?	Textiles, clothing, footwear and leather goods	0	1	0	1	3	5
	Food, beverage and tobacco in specialist stores	1	0	1	0	0	2
Total		1	1	1	1	3	7

Fisher's Exact test: Retail categories & Ownership percentage

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	5.942			.286		
N of Valid Cases	7					

a. 10 cells (100.0%) have expected count less than 5. The minimum expected count is .29.

Table 4.13: Fisher's Exact test: Retail categories and Ownership percentage

4.2.3.3 *Number of employees*

In a similar vein in which the relationship was tested between the number of employees a company employ and their propensity to lease, the relationship to own was investigated.

The null hypothesis is not rejected for the relationship between the number of employees and the propensity to own, which was demonstrated by the Fisher's exact outcome shown in Table 4.14 below.

Number of staff * Owning Crosstabulation

		Does your company own any Distribution Centres and/or Warehouses?		Total
		Yes	No	
What is the number of staff employed by your company?	5001-10,000	0	1	1
	15,001-20,000	1	0	1
	20,001-30,000	3	0	3
	30,001-50,000	0	1	1
	50,001-80,000	2	0	2
	More than 80,001	1	1	2
Total		7	3	10

Fisher's Exact test: number of employees & Owning

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	6.620			.200		
N of Valid Cases	10					

a. 12 cells (100.0%) have expected count less than 5. The minimum expected count is .30.

Table 4.14: Fisher's Exact test: Number of employees and Owning

4.2.3.4 *Financial & non-financial determinants' level of importance*

The respondents were asked to rank twenty-three different factors that can potentially influence a retailer's decision to own a distribution centre or warehouse rather than leasing. They were also allowed to provide an additional "other" factor. The list that was presented for ranking comprises a mixture of financial and non-financial determinants –refer to Table 4.18 below. Of the factors, ten were financial- and thirteen non-financial determinants which yielded 43% and 57% of the total number of determinants, respectively. A Likert scale was used to rank each determinant by importance. The scale consisted of the options: "Very Important", "Important", "Neutral", "Not Important" and "N/A".

Descriptive statistics were employed as guided by Boone Jr and Boone (2012) where they said that Likert scale data "*…are analysed at the interval measurement scale. Likert-scale items are created by calculating a composite score (sum or mean) from four or more type Likert-type items; therefore, the composite score for Likert scales should be analysed at the interval measurement scale. Descriptive statistics recommended for interval scale items include the mean for central tendency and standard deviations for variability*."

As said in the preceding paragraph, descriptive statistics were utilised to demonstrate the level of importance of the financial and non-financial factors when a company considers owning a distribution centre and/or warehouse – refer to Table 4.15 and Table 4.16. The data was split into two categories, to deduce whether the respondents favour financial or non-financial determinants when considering owning their distribution centres and/or warehouses. The data was used to calculate a mean which illustrates how important (on a scale) the financial and non-financial factors are when considering owning distribution centres and/or warehouses and ultimately determine which factors are more important than the others, i.e. financial or non-financial factors.

Financial Factors Ownership Frequencies

		Responses		Percent of Cases
		N	Percent	
Financial Factors influencing ownership[a]	Not Important	29	27.9%	290.0%
	Neutral	28	26.9%	280.0%
	Important	37	35.6%	370.0%
	Very Important	10	9.6%	100.0%
Total		104	100.0%	1040.0%

a. Group

Table 4.15: Financial factors frequencies

Non-Financial Factors Ownership Frequencies				
		Responses		Percent of Cases
		N	Percent	
Non-Financial Factors influencing ownership	Not Important	20	17.9%	200.0%
	Neutral	43	38.4%	430.0%
	Important	31	27.7%	310.0%
	Very Important	18	16.1%	180.0%
Total		112	100.0%	1120.0%
a. Group				

Table 4.16: Non-financial factors frequencies

To determine how important these factors are on the scale of importance, the data was reconfigured to create a rating for each factor and ignores "N/A" to avoid skewing the results. Following Bernstein (2005), the ranking was done as follows: "Very Important" = 4; "Important" = 3; "Neutral" = 2; and "Not Important" = 1. The mean was derived for each group to determine which of the two categories are considered more important. Non-financial factors had a mean score of 2.4364 and financial factors had a mean score of 2.2631 (refer Table 4.17). We conclude therefore that non-financial factors (i.e. determinants) are marginally more important than the financial factors when deciding whether a company should own their distribution centres and/or warehouses – see scale in Figure 4.6. An interesting observation in the mean calculation results, Table 4.19 is that the most important factor is the security of tenure, a non-financial factor, and the least important factor is the potential for capital gain – a financial factor

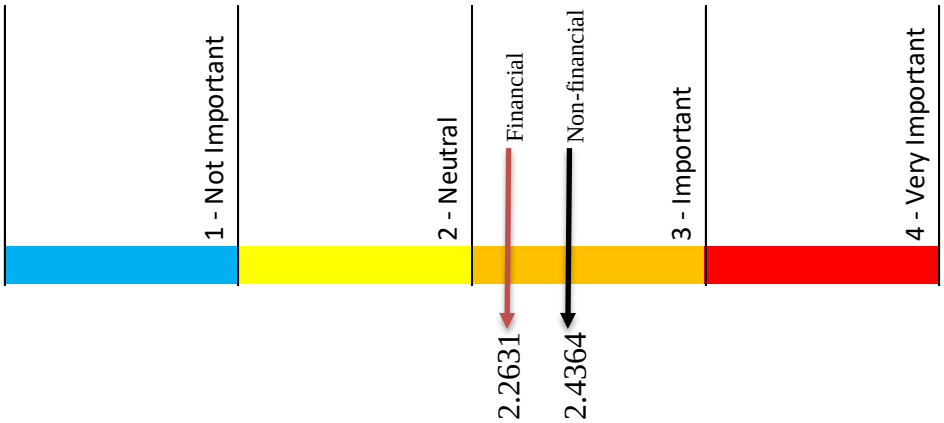

Figure 4.6: Ownership: Mean of financial and non-financial relative to the importance scale

It is an interesting observation that there is but a nominal difference between the financial- and non-financial determinants that influence ownership decision since mainstream literature primarily considers financial factors. This observation justifies further research into how, why and by what measure non-financial factors influence these decisions.

Descriptive Statistics: Financial- and Non-financial factors influencing DC and/or warehouse ownership decisions	N	Mean	Std. Deviation
Financial factors	10	2.2631	.51475
Non-financial	10	2.4364	.58010
Valid N (listwise)	10		

Table 4.17: Ownership: Mean of financial and non-financial factors

Determinants	**Category**
Avoidance of rental increases	Financial
Avoidance of long term commitments to lease terms and conditions	Financial
Control over management costs	Financial
Protection of expensive investment in property (i.e. equipment and plant)	Non-financial
Potential for capital gain	Financial
Potential for long term development opportunities	Non-financial
Contribution to joint venture programs	Non-financial
Capital allowances	Financial
Tax shields	Financial
Control over operating costs	Financial
Ability to acquire the property at below-market levels	Financial
Superior achievable yield	Financial
Favourable loan terms	Financial
Security of tenure	Non-financial
General safety and security	Non-financial
Yard size	Non-financial
Eave height	Non-financial
Located in an industrial park or estate	Non-financial
Unique building design	Non-financial
Availability of stock/rentable property	Non-financial
Autonomy in managing the property	Non-financial
Flexibility in size requirements (i.e. expanding and reducing space)	Non-financial
Highest and best use change risk (i.e. when a property becomes obsolete)	Non-financial

Table 4.18: Ownership: Financial & Non- Financial determinants

Determinants	**Category**	**Mean**
Avoidance of rental increases	Financial	2.67
Avoidance of long term commitments to lease terms and conditions	Financial	2.50
Control over management costs	Financial	2.50
Protection of expensive investment in property (i.e. equipment and plant)	Non-financial	2.33
Potential for capital gain	Financial	**1.30**
Potential for long term development opportunities	Non-financial	2.20
Contribution to joint venture programs	Non-financial	1.63
Capital allowances	Financial	2.10
Tax shields	Financial	1.89
Control over operating costs	Financial	2.80
Ability to acquire the property at below-market levels	Financial	2.44
Superior achievable yield	Financial	2.25
Favourable loan terms	Financial	2.33
Security of tenure	Non-financial	**3.00**
General safety and security	Non-financial	2.20
Yard size	Non-financial	2.30
Eave height	Non-financial	2.56
Located in an industrial park or estate	Non-financial	2.33
Unique building design	Non-financial	2.40
Availability of stock/rentable property	Non-financial	2.56
Autonomy in managing the property	Non-financial	2.22
Flexibility in size requirements (i.e. expanding and reducing space)	Non-financial	2.90
Highest and best use change risk (i.e. when a property becomes obsolete)	Non-financial	2.50

Table 4.19: Mean: Factors influencing ownership decision

4.2.4 Leasing: What Influences the Decision to Lease?

The data indicated that 90% of the respondents' lease distribution centres and/or warehouses and the remaining 10% do not. The respondents that indicated that they do not lease these properties were excluded from the ensuing paragraphs in this section of the report. Therefore, the following data only considers nine of the ten respondents. Table 4.21 below illustrates the distribution of leased percentages over the different categories.

Does your company lease any Distribution Centres and/or Warehouses?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	90.0	90.0	90.0
	No	1	10.0	10.0	100.0
	Total	10	100.0	100.0	

Table 4.20: DC and/or Warehouse ownership

4.2.4.1 *Market Capitalisation*

A Fisher's Exact test was used to test if there is a statistical significance between the size of a business (measured by market capitalisation) and the percentage of warehouses leased. The null hypothesis (H_0), that no relationship exists, was tested by employing the Fisher's Exact test. Table 4.22 demonstrates the data which is used to test the null hypothesis (H_0) and Table 4.23 provides the results. The Fisher's Exact test demonstrated that no relationship exists between the market capitalisation of a company and the percentage distribution centres and/or warehouses they own. The p-value calculated is 0.999. Given that this is higher than the significance level of 0.05, we cannot reject the null hypothesis (H_0) that no statistically significant relationship exists between the market capitalisation and percentage ownership of warehouses and/or distribution centres.

			Does your company lease any Distribution Centres and/or Warehouses? Yes	Total
What is the approximate percentage of Distribution Centres and/or Warehouses leased?	1% - 10%	Count	2	2
		% of Total	22.2%	22.2%
	26% - 30%	Count	1	1
		% of Total	11.1%	11.1%
	51% - 60%	Count	1	1
		% of Total	11.1%	11.1%
	61% - 70%	Count	2	2
		% of Total	22.2%	22.2%
	71% - 80%	Count	1	1
		% of Total	11.1%	11.1%
	91% - 100%	Count	2	2
		% of Total	22.2%	22.2%
Total		Count	9	9
		% of Total	100.0%	100.0%

Table 4.21: Percentage of DCs & warehouses leased

Percentage of Distribution Centres and/or Warehouses leased * Market capitalisation Crosstabulation

Count

		What is the approximate market capitalisation of the company you represent?					
		Between R5billion and R10billion	Between R10billion and R20billion	Between R30billion and R40billion	Between R40billion and R50billion	More than R80billion	Total
What is the approximate percentage of Distribution Centres and/or Warehouses leased?	0%	0	0	1	0	0	1
	1% - 10%	0	1	1	0	0	2
	26% - 30%	0	1	0	0	0	1
	51% - 60%	1	0	0	0	0	1
	61% - 70%	0	0	0	1	1	2
	71% - 80%	0	0	0	0	1	1
	91% - 100%	1	0	0	0	1	2
Total		2	2	2	1	3	10

Table 4.22: Percentage leasing and Market Capitalisation comparison

Fisher's Exact test: Market Capitalisation & Leased percentage

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	21.308			0.999		
N of Valid Cases	9					

a. 30 cells (100.0%) have expected count less than 5. The minimum expected count is .11.

Table 4.23: Fisher's Exact test: Market capitalisation and Percentage leased

4.2.4.2 *Retail Category*

The same test were carried out to test the independence of the two variables: retail category and whether retailers choose to lease DCs and/or warehouses- see Table 4.24. The Fisher's Exact test could not reject the null hypothesis (H_0) as the p-values were more than the significance level of 0.05. No relationship, therefore, exists between the retail category and whether a retailer chooses to lease their DCs and/or warehouses.

Retail category * Leasing Crosstabulation

		Does your company lease any Distribution Centres and/or Warehouses?		Total
		Yes	No	
Which retail category best describes your company?	Textiles, clothing, footwear and leather goods	4	1	5
	Household furniture, appliances and equipment	2	0	2
	Food, beverage and tobacco in specialist stores	3	0	3
Total		9	1	10

Fisher's Exact test: Retail categories & Leasing

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	1.428			0.999		
N of Valid Cases	10					

a. 6 cells (100.0%) have expected count less than 5. The minimum expected count is .20.

Table 4.24: Fisher's Exact test: Retail categories and Leasing

A similar result was obtained when we performed the test to determine if a relationship exists between the retail category and the percentage of DCs and/or warehouses leased. The null hypothesis (H_0) is not rejected since the p-value was 0.619 for the Fisher's Exact test – refer to **Table 4.25**.

Which retail category best describes your company? * What is the approximate percentage of Distribution Centres and/or Warehouses leased? Crosstabulation

		What is the approximate percentage of Distribution Centres and/or Warehouses leased?						
		1% - 10%	26% - 30%	51% - 60%	61% - 70%	71% - 80%	91% - 100%	Total
Which retail category best describes your company?	Textiles, clothing, footwear and leather goods	2	1	0	1	0	0	4
	Household furniture, appliances and equipment	0	0	1	0	0	1	2
	Food, beverage and tobacco in specialist stores	0	0	0	1	1	1	3
Total		2	1	1	2	1	2	9

Fisher's Exact test: Retail categories & Leasing percentage

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	10.430			.619		
N of Valid Cases	9					

a. 18 cells (100.0%) have expected count less than 5. The minimum expected count is .22.

Table 4.25: Fisher's Exact test: Retail categories and Leasing percentage

4.2.4.3 *Number of employees*

The number of employees that the retailers employ differs for each company and we aimed to determine if the number of employees a company has an influence on the company's decision to lease or own its DCs and/or warehouses.

The null hypothesis is not rejected for the relationship between the number of employees and the propensity to lease. This is demonstrated by the Fisher's Exact test outcome as shown in Table 4.26 below.

Number of staff * Leasing Crosstabulation

		Does your company lease any Distribution Centres and/or Warehouses?		Total
		Yes	No	
What is the number of staff employed by your company?	5001-10,000	1	0	1
	15,001-20,000	0	1	1
	20,001-30,000	3	0	3
	30,001-50,000	1	0	1
	50,001-80,000	2	0	2
	More than 80,001	2	0	2
Total		9	1	10

Fisher's Exact test: number of employees & Leasing

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	7.273			.300		
N of Valid Cases	10					

a. 12 cells (100.0%) have expected count less than 5. The minimum expected count is .10.

Table 4.26: Fisher's Exact test: Number of employees and Leasing

4.2.4.4 *Financial & non-financial determinants' level of importance*

The respondents were asked to rank seventeen different factors that could potentially influence a retailer's decision to lease a distribution centre or warehouse rather than owning. They were also allowed to provide an additional "other" factor. The list that was presented for ranking comprised of a mixture of financial and non-financial determinants drawn from the literature – refer to Table 4.27. Of the factors, six were financial- and eleven non-financial determinants which yielded 35% and 65% of the total number of determinants, respectively. A Likert scale was again used to identify the importance of each determinant. The Likert scale consisted of the options: "Very Important", "Important", "Neutral", "Not Important" and "N/A".

Determinants	Category
Tax deductibility of lease payments	Financial
Conserving cash (i.e. preserving liquidity)	Financial
Lowering the cost of financing assets compared to debt financing	Financial
Easier terms than with conventional types of debt	Financial
The flexibility of size of space when letting	Non-financial
Ability to test site locality without a long term commitment	Non-financial
Less risk of being tied to a functionally obsolete building	Non-financial
Passing on real estate management responsibilities to focus on core business	Non-financial
Greater flexibility in terms of expensive versus cheaper location	Financial
Availability of ancillary services	Non-financial
Ability to establish community links in aid of business	Non-financial
Market uncertainty	Financial
General safety and security	Non-financial
Yard size	Non-financial
Eave height	Non-financial
Located in an industrial park or estate	Non-financial
Unique building design requirement	Non-financial

Table 4.27: Leasing: Financial & Non- Financial determinants

As said in the preceding section, descriptive statistics were utilised to demonstrate the level of importance of the financial and non-financial factors when a company considers owning a distribution centre and/or warehouse – refer to Table 4.15 and Table 4.16. The data was split into two categories, to deduce whether the respondents favour financial or non-financial determinants when considering owning their distribution centres and/or warehouses. The data was used to calculate a mean which illustrates how important (on a scale) the financial and non-financial factors are when considering owning distribution centres and/or warehouses and ultimately determine which factors are more important than the others, i.e. financial or non-financial factors.

The importance of ownership decision-making factors was determined by assigning a level of importance to each factor in order to rank each factor, it should further be noted that "N/A" was omitted to avoid skewing the results. Again, following Bernstein (2005), the ranking was done as follows: "Very Important" = 4; "Important" = 3; "Neutral" = 2; and "Not Important" = 1 – refer to Figure 4.7. The mean was derived for each group to determine which of the two categories are considered more important. The non-financial factor's mean is 2.4933 and financial factors 2.2049 which is illustrated in Figure 4.7 and Table 4.30 below. The non-financial factors (i.e. determinants) were shown to be marginally more important than the financial factors which were used to assist the respondents when deciding whether they should own their distribution centres and/or warehouses. This outcome is similar to the factors considered when owning distribution centres and/or warehouses.

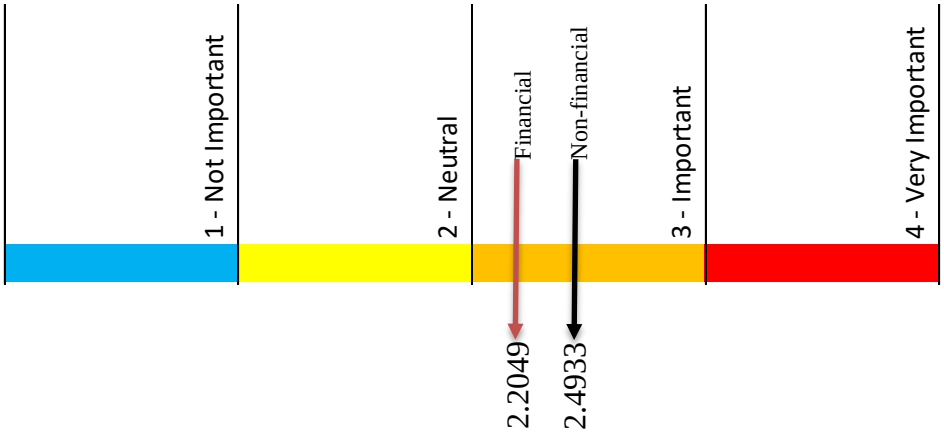

Figure 4.7: Leasing: Mean of financial and non-financial relative to the importance scale

		Responses		Percent of Cases
		N	Percent	
Financial Factors influencing leasing	Not Important	6	10.2%	60.0%
	Neutral	23	39.0%	230.0%
	Important	24	40.7%	240.0%
	Very Important	6	10.2%	60.0%
Total		59	100.0%	590.0%

Table 4.28: Leasing: Financial determinants considered

		Responses		Percent of Cases
		N	Percent	
NonFinancial Factors influencing leasing	Not Important	26	24.8%	260.0%
	Neutral	41	39.0%	410.0%
	Important	28	26.7%	280.0%
	Very Important	10	9.5%	100.0%
Total		105	100.0%	1050.0%

Table 4.29: Leasing: Non-financial determinants considered

Descriptive Statistics: Financial- and Non-financial factors influencing DC and/or warehouse leasing decisions			
	N	Mean	Std. Deviation
Financial factors	10	2.2049	.62341
Non-financial	10	2.4933	.51563
Valid N (listwise)	10		

Table 4.30: Leasing: Mean of financial and non-financial factors

Furthermore, it is interesting to note that there is but a nominal difference between the financial- and non-financial determinants that influence ownership decision since mainstream literature primarily considers financial factors. This observation justifies further research into how, why and by what measure non-financial factors influence these decisions. A notable observation in the results in Table 4.31 is that the most important factor is to preserve liquidity, a financial factor, and the least important factor is whether the real estate is located in an industrial park or estate – a non-financial factor.

Determinants	Category	Mean
Tax deductibility of lease payments	Financial	2.30
Conserving cash (i.e. preserving liquidity)	Financial	**3.10**
Lowering the cost of financing assets compared to debt financing	Financial	2.90
Easier terms than with conventional types of debt	Financial	2.56
The flexibility of size of space when letting	Non-financial	2.40
Ability to test site locality without a long term commitment	Non-financial	2.13
Less risk of being tied to a functionally obsolete building	Non-financial	2.22
Passing on real estate management responsibilities to focus on core business	Non-financial	2.00
Greater flexibility in terms of expensive versus cheaper location	Financial	2.10
Availability of ancillary services	Non-financial	2.22
Ability to establish community links in aid of business	Non-financial	2.33
Market uncertainty	Financial	2.10
General safety and security	Non-financial	1.90
Yard size	Non-financial	2.50
Eave height	Non-financial	2.70
Located in an industrial park or estate	Non-financial	**1.80**
Unique building design requirement	Non-financial	2.10

Table 4.31: Mean: Factors influencing leasing decision

4.2.5 Lease-Versus-Buy: What Influences the Decision when face with the two options?

Broadly speaking, acquisition takes one of two forms: lease or own. Leasing of CRE assumes long-term leasing or sale-and-leasebacks and ownership means all other categories found in Table 4.2. The Fisher's Exact test was used to test whether there is a relationship between the propensity to lease and to own. The null hypothesis (H_0), that no relationship exists, was tested by employing the Fisher exact test. The Fisher exact yielded a ρ-value of 0.043 which is less than the significance level of 0.05 and therefore the null hypothesis (H_0) is rejected. This suggests that a significant relationship exists between the percentage leased and percentage owned –refer to Table 4.32 below.

Leasing * Ownership Crosstabulation

		What is the approximate percentage of Distribution Centres and/or Warehouses owned?							Total
		0%	1%-10%	26%-30%	51%-60%	61%-70%	71% - 80%	91% - 100%	
What is the approximate percentage of Distribution Centres and/or Warehouses leased?	0%	0	0	0	1	0	0	2	3
	16%-20%	0	0	0	0	0	1	0	1
	21%-25%	0	0	0	0	1	0	0	1
	26% - 30%	0	0	0	0	1	0	0	1
	71% - 80%	0	0	1	0	0	0	0	1
	91% - 100%	1	2	0	0	0	0	0	3
Total		1	2	1	1	2	1	2	10

Fisher's Exact test: Leasing and Ownership

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	37.345			.043		
N of Valid Cases	10					

a. 42 cells (100.0%) have expected count less than 5. The minimum expected count is .10.
b. The standardized statistic is -2.845.

Table 4.32: Fisher's Exact test: Leasing- and Ownership percentage

4.2.5.1 *Market capitalisation*

The Fisher exact test was again used to test whether there is a statistical significance between the size of a business (measured as market capitalisation) and the acquisition method, i.e. own, lease or both. Both tests were performed on two variables of the data: all market capitalisation categories Table 4.33 and a split between companies with capitalisation above R40billion and those with capitalisation rates below R40billion (Table 4.34).

What is the approximate market capitalisation of the company you represent? * Acquisition method of DCs and Warehouse - lease or buy Crosstabulation

Count

		Acquisition method of DCs and Warehouse - lease or buy or lease-and-buy			Total
		Buy	Lease	Buy and lease	
What is the approximate market capitalisation of the company you represent?	Between R5billion and R10billion	1	1	0	2
	Between R10billion and R20billion	2	0	0	2
	Between R30billion and R40billion	2	0	0	2
	Between R40billion and R50billion	0	0	1	1
	More than R80billion	1	1	1	3
Total		6	2	2	10

Fisher's Exact test: Market Capitalisation & Acquisition method

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	7.773			.771		
N of Valid Cases	10					

a. 15 cells (100.0%) have expected count less than 5. The minimum expected count is .20.

Table 4.33: Fisher's Exact test: Market capitalisation and Acquisition 5x3 contingency table (test 1)

Market capitalisation above and below R40billion * Acquisition method of DCs and Warehouse - lease or buy Crosstabulation

Count

		Acquisition method of DCs and Warehouse - lease or buy or lease-and-buy			Total
		Buy	Lease	Buy and lease	
Market capitalisation above and below R40billion	Below R40billion	5	1	0	6
	Above R40billion	1	1	2	4
Total		6	2	2	10

Fisher's Exact test: Market Capitalisation & Acquisition method

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	4.027			.119		
N of Valid Cases	10					

a. 6 cells (100.0%) have expected count less than 5. The minimum expected count is .80.

Table 4.34: Fisher's Exact test: Market capitalisation and Acquisition 2x2 contingency table (test 2)

The null hypothesis (H_0), that no relationship exists, was tested by employing the Fisher's exact test. The hypothesis testing was done for two iterations of data structuring of which both tests, test 1 and test 2, yielded the same result – null hypothesis is not rejected. The p-value for test 1 was calculated at 0.771 and 0.119 for test 2. Both are higher than the significance level of 0.05 and therefore the null hypothesis (H_0) is not rejected; implying no relationship exists between the market capitalisation and the method of acquisition.

4.2.5.2 *Retail categories*

Here again, we used the Fisher's Exact test to test whether there is a statistical significance between the different retail categories and the acquisition method, i.e. own, lease or both.

Which retail category best describes your company? * Acquisition method of DCs and Warehouse - lease or buy Crosstabulation

		Acquisition methods			
		Buy	Lease	Buy and lease	Total
Which retail category best describes your company?	Textiles, clothing, footwear and leather goods	4	0	1	5
	Household furniture, appliances and equipment	1	1	0	2
	Food, beverage and tobacco in specialist stores	1	1	1	3
Total		6	2	2	10

Fisher's Exact test: Retail categories & Acquisition methods

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Fisher's Exact Test	4.000			.571		
N of Valid Cases	10					

a. 9 cells (100.0%) have expected count less than 5. The minimum expected count is .40.

Table 4.35: Fisher's Exact test: Retail categories and Acquisition method

The null hypothesis (H_0), that no relationship exists, was tested by employing the Fisher Exact test. The ρ-value was 0.571 which is higher than the significance level of 0.05 and therefore the null hypothesis (H_0) is not rejected; suggesting that there is no relationship between the retail category a firm operates in and the method of acquisition it prefers.

4.2.5.3 ***Financial & non-financial determinants***

4.2.5.3.1 Non-financial determinants influencing lease-versus-buy decision

The questionnaire included a section that focussed on non-financial determinants influencing the lease-versus-buy decision with a particular emphasis on the role played by location, physical attributes (i.e. height, size, etc.) and company ownership policies.

a. Location

The questionnaire demonstrated that 90% of respondents consider location in their lease-versus-buy decision. The level of importance was determined by asking respondents to rank four location factors as either not applicable, not important, neutral, important or very important. The mean of the four location factors is 2.9250, as illustrated in Figure 4.8. We see that the closest level of importance is "important" and therefore one can deduce that location factors, in general, do play a significant role in the lease-versus-buy decision. If one considers each separate factor, then one will observe as set out in Table 4.37 that access to highways and/or access to roads enjoys the most importance with a mean of 3.80 and property location being the least important with a mean of 2.10.

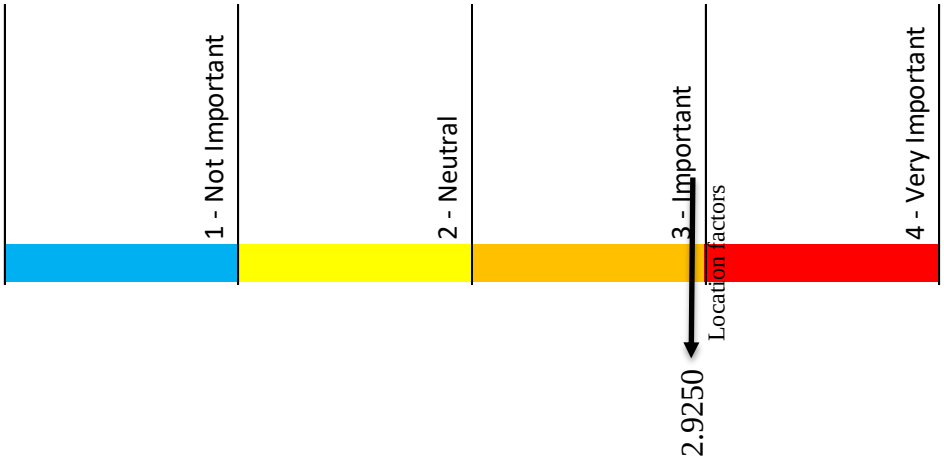

Figure 4.8: Importance scale: location factors

		Responses	
		N	Percent
Site location factors ranking[a]	Not Important	3	7.5%
	Neutral	10	25.0%
	Important	14	35.0%
	Very Important	13	32.5%
Total		40	100%

Table 4.36: Location factors ranking

	N	Minimum	Maximum	Mean
Access road/highways	10	3	4	3.80
Located close to skilled labour	10	2	4	2.90
Located close to public transport	10	2	4	2.90
Located in a prominent area	10	1	3	2.10

Descriptive Statistics: Location factors mean

	N	Mean	Std. Deviation
Mean of location factor influencing the lease-versus-buy decision	10	2.9250	.42573
Valid N (listwise)	10		

Table 4.37: Mean: Location factors

b. Physical attributes

The questionnaire established that 80% of respondent's lease-versus-buy decisions concerning distribution centres and/or warehouses are influenced by the property's physical attributes such as size (expressed as area), eave height, etcetera – as shown in Table 4.38 below. The level of importance was determined by asking: does the physical attributes (e.g. size, eave height, etc.) of a Distribution Centre and/or Warehouse influence the decision to lease or buy the property?

Does the physical attributes (e.g. size, eave height, etc.) of a Distribution Centre and/or Warehouse influence the decision to lease or buy the property?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	80.0	80.0	80.0
	No	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Table 4.38: Physical attributes

c. Company policy

Corporations' policy was shown to influence 40% of the responding companies' decision in the lease-versus-buy decision making with the remaining 60% indicating that their lease-versus-buy decision is not influenced by company policy. The next, accompanying, question in the survey asked the respondents to answer how such a company policy "lean"; i.e. will the company prefer to own or lease distribution centres or warehouses or is it not applicable. The data indicated that 20% of respondents thought the question surrounding company policy preference was not applicable, so one can infer that the company policy of 40% of the

respondents did not give consideration to whether they lease or own these types of properties. If the *not applicable* is disregarded, then one can see that leasing was favoured by 75% of the respondents' company policy compared to 25% who were in favour of ownership.

Does your company's policy influence the decision to lease or buy Distribution Centres and/or Warehouses?		Frequency	Percent
Valid	Yes	4	40.0
	No	6	60.0
	Total	10	100.0

Table 4.39: Influence of company policy in lease-versus-buy decision

Does the company policy lean towards ownership or leasing of Distribution Centres and/or Warehouses?		Frequency	Percent
Valid	Ownership	2	25.0
	Leasing	6	75.0
	Total	8	100.0

Table 4.40: Company Policy: Own or Lease

The non-financial factors that have been considered in the dissertation's questionnaire only provide insight into the broad aspects of non-financial determinants that influence the lease-versus-buy decision. Broadly speaking, the consensus is that non-financial factors do play a role in the lease-versus-buy decision and since the manner and extent of the consideration are not explicitly resolved in the literature, further research is required.

4.2.5.3.2 Financial determinants influencing lease-versus-buy decision

This section of the questionnaire placed an emphasis, not on an ownership decision or lease decision in isolation, but rather treated ownership and leasing as mutually exclusive acquisition methods and gives consideration to the financial factors

a. Financial position

70% of the respondents indicated that the financial position, or performance, of a company, influences the lease-versus-buy decision of distribution centres and/or warehouses whereas 30% indicated that it does not play a role.

Does the financial position of your company influence the decision to lease or buy Distribution Centres or Warehouse?		Frequency	Percent
Valid	Yes	7	70.0
	No	3	30.0
	Total	10	100.0

Table 4.41: Influence of the financial position in a lease-versus-buy decision

b. Local real estate market condition

The influence of real estate conditions on the decision to lease or own distribution centres and/or warehouses was split 50/50 and therefore does not provide significant insight.

Does the local real estate market conditions influence the decision to lease or buy Distribution Centres and/or Warehouses?		Frequency	Percent
Valid	Yes	5	50.0
	No	5	50.0
	Total	10	100.0

Table 4.42: Influence of local real estate market condition in a lease-versus-buy decision

c. Financial analysis

The survey asked respondents which financial analysis (quantitative analysis referred to in the questionnaire) methods they employ in comparing owning or leasing distribution centres and/or warehouses. 80% of the respondents indicated that they make use of net present value analysis between owning and leasing such properties. Conventional wisdom suggests that when comparing the net present value (NPV) of the cash flow for both options, leasing and owing, the higher value which an NPV calculation yields should be an indication of which option to adopt. The data further shows that 40% of the respondents make use of cash flow comparison of lease versus buy, and 20% do not use any quantitative methods. One respondent commented that they rather consider balance sheet implication. We however deemed this an accounting technique than a quantitative analysis method. Table 4.43 summarises the aforementioned method's frequency.

What quantitative methods are used to evaluate the alternative of leasing versus buying Distribution Centres and/or Warehouses	Frequency	Percent
Net Present Value (NPV) of leasing-versus-buying	8	80.0
Comparison of cash flow of leasing to the cash flow of buying	4	40.0
Comparison of net income from leasing to net income of buying	0	00.0
None: No quantitative methods are used to evaluate the Lease-versus-buy decision	2	20.0

Table 4.43: Financial analysis methods employed in LVB decision

d. Discount rate

In discounting the cash flow to derive an NPV, the respondents were asked to indicate which discount rate they employ during their analysis. The weighted average cost of capital enjoyed the highest percentage at 70%, the after-tax cost of debt was used by 10% of the respondents.

20% of the respondents do not make use of NPV analysis and therefore this question did not apply to these respondents – refer to Table 4.44. Also, no respondents considered the before-tax cost of debt, rate of return of new investments or rate of return of previous investments.

In using a Discounted Cash Flow method to decide whether to lease or buy Distribution Centres and/or Warehouses, what is used as a discount rate?	Frequency	Percent
After-tax cost of debt	1	10.0
Weighted Average Cost of Capital (WACC)	7	70.0
N/A	2	20.0
Total	5	100.0

Table 4.44: Discount rate

4.2.6 Other considerations

4.2.6.1 *Purchase options in lease agreements*

The questionnaire asked respondents if their leases make provision for a purchase option of which (omitting the "not applicable" response) 55.55% said their leases do make provision and the other 44.44% do not. None of the respondents whose leases make provision for a purchase option have ever exercised such an option.

4.2.6.2 *Sale-and-leaseback*

This question aimed to determine if retailers make use of sale-and-leaseback agreements, to what extent it is considered, the method they use to analyse such an agreement and the advantages of a sale-and-leaseback. Only one of the respondents has made use of a sale-and-leaseback and therefore one can conclude that sale-and-leaseback agreements are not prevalent among retailers in respect of distribution centres and/or warehouses.

4.2.6.3 *COVID-19 pandemic: Lease-versus-own decision affected?*

As of September 2020, the COVID-19 pandemic has not influenced 90% of the respondents' approach to the lease-versus-buy decision specifically concerning distribution centres and/or warehouses and the preference to own these properties have not changed; 40% would own these types of properties compared to 60% that would rather lease.

4.3 Summary of Findings

4.3.1 Fisher's Exact Test of Independence Consolidated Table

Table 4.45 below shows that a significant relationship exists between only two of twelve scenarios where the Fisher's Exact test of independence was employed.

Fisher's Exact test of independence: Consolidated findings			
No.	**Variable 1**	**Variable 2**	***ρ*-value**
1	Market Capitalisation	Ownership	0.167
2	Market Capitalisation	Leasing	0.999
3	Market Capitalisation	Acquisition Method	0.771
4	Market Capitalisation (< or > R40billion)	Acquisition Method	0.119
5	Lease	Ownership	0.043*
6	Retail Category	Acquisition Method	0.571
7	Retail Category	Ownership	0.033*
8	Retail Category	Percentage Owned	0.286
9	Retail Category	Leasing	0.999
10	Retail Category	Percentage Leased	0.619
11	Number of employees	Ownership	0.200
12	Number of employees	Leasing	0.300

**Significant relationship where $\rho<0.05$*

Table 4.45: Fisher's Exact test of independence: Consolidated findings

4.3.2 Ownership: Ranking financial and non-financial determinants

Table 4.46 demonstrates, in descending order, how the financial and non-financial determinants ranked when considering during an ownership decision-making process.

Rank	Determinants	Category	Mean
1	Security of tenure	Non-financial	**3**
2	Flexibility in size requirements (i.e. expanding and reducing space)	Non-financial	2.9
3	Control over operating costs	Financial	2.8
4	Avoidance of rental increases	Financial	2.67
5	Eave height	Non-financial	2.56
6	Availability of stock/rentable property	Non-financial	2.56
7	Avoidance of long term commitments to lease terms and conditions	Financial	2.5
8	Control over management costs	Financial	2.5
9	Highest and best use change risk (i.e. when a property becomes obsolete)	Non-financial	2.5
10	Ability to acquire the property at below-market levels	Financial	2.44
11	Unique building design	Non-financial	2.4
12	Protection of expensive investment in property (i.e. equipment and plant)	Non-financial	2.33
13	Favourable loan terms	Financial	2.33
14	Located in an industrial park or estate	Non-financial	2.33
15	Yard size	Non-financial	2.3
16	Superior achievable yield	Financial	2.25
17	Autonomy in managing the property	Non-financial	2.22
18	Potential for long term development opportunities	Non-financial	2.2
19	General safety and security	Non-financial	2.2
20	Capital allowances	Financial	2.1
21	Tax shields	Financial	1.89
22	Contribution to joint venture programs	Non-financial	1.63
23	Potential for capital gain	Financial	**1.3**

Table 4.46: Ownership: Rank of financial & non-financial determinants

4.3.3 Leasing: Ranking financial and non-financial determinants

Table 4.47 demonstrates, in descending order, how the financial and non-financial determinants ranked when considering during a leasing decision-making process.

Rank	Determinants	Category	Mean
1	Conserving cash (i.e. preserving liquidity)	Financial	**3.1**
2	Lowering the cost of financing assets compared to debt financing	Financial	2.9
3	Eave height	Non-financial	2.7
4	Easier terms than with conventional types of debt	Financial	2.56
5	Yard size	Non-financial	2.5
6	The flexibility of size of space when letting	Non-financial	2.4
7	Ability to establish community links in aid of business	Non-financial	2.33
8	Tax deductibility of lease payments	Financial	2.3
9	Less risk of being tied to a functionally obsolete building	Non-financial	2.22
10	Availability of ancillary services	Non-financial	2.22
11	Ability to test site locality without a long term commitment	Non-financial	2.13
12	Greater flexibility in terms of expensive versus cheaper location	Financial	2.1
13	Market uncertainty	Financial	2.1
14	Unique building design requirement	Non-financial	2.1
15	Passing on real estate management responsibilities to focus on core business	Non-financial	2
16	General safety and security	Non-financial	1.9
17	Located in an industrial park or estate	Non-financial	**1.8**

Table 4.47: Leasing: Rank of financial & non-financial determinants

4.3.4 Lease-versus-buy: Ranking financial and non-financial determinants

Table 4.48 demonstrates which determinants are regarded as the most important when retailers are faced with the decision of whether they should lease or buy their Distribution Centres/Warehouses.

Rank	Determinants	Category	Percentage that consideration to the determinant
1	Location	Non-financial	90%
2*	Physical Attributes	Non-financial	80%
2*	Financial analysis	Financial	80%
4	Financial Position	Financial	70%
5	Local real estate market condition	Financial	50%
6	Company Policy	Non-financial	40%

**Ranked equally*

Table 4.48: Lease-versus-buy: Ranking financial and non-financial determinants

4.4 Discussion of Findings

Companies that do not consider real estate as a prime revenue stream, such as retailers, are not regarded as real estate specialists since their primary objective is to sell products to customers (Nourse & Roulac, 1993). Their consequential real estate requirements are therefore secondary to that of sales. This research attempted to provide an insight into how, given this fact, retailers approach real estate acquisition, particularly distribution centres and/or warehouses.

4.4.1 Respondents characteristics

This research identified fourteen listed companies of which ten responded, yielding a response rate of 71.43% which is considered a good response rate in the normal course of a research project, but from a purist statistical perspective, the number of responses was low and limited ability to achieve this dissertation's primary objective. As mentioned in the preceding chapter, the market share these 10 companies represent justified using this primary data to attempt to answer this dissertation's question. Furthermore, no responses were received by listed retailers whose primary business is that of pharmaceutical and medical goods; consequently, the findings did not consider that sector of the listed retail market which further limits this dissertation. A gap, therefore, exists which requires further research into how pharmaceutical and medical goods retailers make decisions about CRE, specifically distribution centres and/or warehouses.

The level of seniority of the respondents also provides credibility to the research data and therefore the inference one makes does reflect an accurate depiction of what transpires within the participating listed companies. The research fails to capture a market capitalisation of between R20billion to R30billion and R50billion to R80billion. Insight into corporations of this size, expressed as market capitalisation, is required to make a holistic deduction of how all retail corporations approach the lease-versus-buy decision. As a result of the data received, this research project has only considered retailers within the R5-20billion, R30-50billion and above R80billoin market capitalisation range. The research does, however, fail to demonstrate whether listed retailers exist within market capitalisation bands.

The data shows that the number of staff employed by the respondents ranges from 5,000 to more than 80,000 which demonstrates that the data captured a wide range of employers and in turn assist in deducing whether this variable influences DC and/or warehouse decision-making.

4.4.2 Acquisition methods

Both ownership and leasing, or the combination of both, are considered as mechanisms to acquire distribution centres and/or warehouses (Brown, Lapides & Rondeau, 1994; Brueggeman, Fisher & Porter, 1990; Manning, 1991; O'Mara, 1999; Zeckhauser & Silverman, 1983). We find that 90% of the respondents in this survey utilise a lease as an acquisition method and 70% of the respondents own these types of CRE as indicated in Table 4.6 and Table 4.20 respectively.

The data shows that the respondents who own distribution centres and/or warehouses use cash from operations (85.71%) and retained earnings (71.45%) to fund the acquisition of these properties - Table 4.7. An interesting observation from this study is that none of the respondents utilises mortgages, the sale of stocks, shares, bonds or commercial paper. Redman and Tanner (1991)'s research showed that there is a propensity for smaller businesses to mortgage their CRE whereas larger companies are less likely to use mortgages. One could expect the same outcome in this research, but none of the respondents utilises mortgages. One could interpret that the listed environment is conducive towards raising capital by way of issuing stocks, shares, bonds or commercial papers, but seeing that none of the respondents indicated that they make use of these acquisition types, this argument does not hold. This research method employed in this dissertation does not observe nuanced information that can be used to deduce why retailers do not make use of these acquisition methods when opting to own these types of CRE. This is an area that future studies can explore.

Furthermore, the significance that was observed between the size of a company and their choice to use mortgages to finance their CRE in Redman and Tanner (1991)'s research is not observed in this dissertation for any of the acquisition methods employed. Consequently, we observed that there is no statistically significant relationship between market capitalisation and the acquisition method.

4.4.3 Percentage owned versus percentage leased

It is logical to deduce that a relationship should exist between the percentage of these assets owned and those leased; as the percentage of CRE leased increases, the percentage owned should reduce and *vice versa*. The Fisher's exact test shows a significant relationship exists between these two variables as shown in Table 4.32. It is not an unexpected outcome and does not provide new insight into how retailers are guided in making CRE-related investment decisions, but rather provides credibility to the data.

4.4.4 The influence of the Retailer's market capitalisation

4.4.4.1 *Ownership*

The findings in Redman and Tanner (1991) showed that a significant relationship exists between the size of a company and their propensity to lease CRE, i.e. the higher the size of the company, the more likely it is to lease its corporate real estate. However, the we found no evidence that there is a relationship between the size of listed retailers in South Africa or the propensity to lease distribution centres and/or warehouses– see Table 4.22 and Table 4.23.

4.4.4.2 *Leasing*

As mentioned in the previous section, from an ownership perspective, Redman and Tanner (1991) found that of all the acquisition methods, mortgages are the only source that was found to be significant and all the other sources were insignificant. Barkham and Park (2011) hypothesised that a company's size will increase the probability of them owning CRE, but was rejected as having a significant influence on the decision-making process.

The same outcome is found in the data Table 4.9 and Table 4.10; no statistically significant relationship exists between the different acquisition methods of distribution centres and/or warehouses and the market capitalisation of the listed retailers. The hypothesis drawn from the literature is therefore not rejected and aligns with what the literature demonstrated.

4.4.5 The influence of the number of employees a retailer employs

The number of people employed by the sample companies was not found to influence the decision to lease or own distribution centres and/or warehouses as shown by the absence of a significant relationship between the two variables. The number of employees a company has is a proxy of the size of a company and therefore one might expect, according to Barkham and Park (2011), that a company that employs more people (i.e. a larger company) is more likely to own their CRE. Their results did, however, show insignificant variables with inconsistent directional signs. This result is consistent with this research which demonstrated that the number of employees in a company has an insignificant influence on the lease-versus-buy decision.

4.4.6 The influence of the retail sector

4.4.6.1 *Ownership*

The data demonstrates that there exists a relationship between the retail sub-sector a company operates in and their propensity to own distribution centres and/or warehouses. This suggests

that evidence exist which can lead one to infer that certain sub-sectors are more inclined to own or not own these types of CRE. The data indicates that the majority of textiles, clothing, footwear and leather goods, as well as food, beverage and tobacco in specialist stores, will own these properties whereas the majority of household furniture, appliances and equipment retailers will not – Table 4.12. Due to the low number of observations, one runs the risk to make interferences that cannot be adequately backed up by sufficient data and therefore further research is required.

4.4.6.2 *Leasing*

Contrary to the relationship between the retail categories and ownership, the relationship between these categories and leasing bears no significance – Table 4.24. Barkham and Park (2011) argued that there's a propensity to lease or own CRE within certain industry sectors and therefore one would expect that, as with ownership, leasing would also enjoy similar in that a similar level of significance. This is, however, not accepted in this research outcome. Lastly, however, there is no relationship between the respective retail categories and the percentage of lease and ownership – Table 4.13 and Table 4.25.

4.4.7 Financial- and non-financial determinants' influence

4.4.7.1 *Ownership and Leasing*

The data demonstrate that non-financial determinants enjoy a higher level of importance in comparison to financial determinants in the event that the companies consider purchasing as well as leasing these types of CRE – as depicted in Figure 4.6 and Figure 4.7. The mean of both the financial and non-financial factors differ nominally in the two different scenarios, i.e. when considering ownership and leasing. This is an interesting observation since one would expect, as demonstrated by Ghyoot (2004) that there might be a more substantial difference in the mean since the metrics of assessment differ significantly when considering leasing in contrast to ownership. Furthermore, the outcome adequately represents the respondents seeing as the majority lease and own these properties types.

The data also suggest that both financial and non-financial factors should be considered in making a lease-versus-buy decision in respect of distribution centres and/or warehouses and not only financial factors as the literature suggests (Redman & Tanner, 1991). This statement is backed by the results which illustrate that neither the financial or non-financial factors lean toward "not-important" although overall non-financial determinants are regarded as most important.

Lastly, Table 4.31 and Table 4.19 shows that ownership decision's highest-rated determinant, in terms of the highest mean, is a non-financial factor i.e. security of tenure, whereas leasing's highest-rated determinant is a financial factor, conservation of cash (i.e. preserving liquidity). Whereas the lowest non-financial factor is whether the asset is located in an industrial park and the lowest financial factor is the potential for capital gain. The outcome suggests that there's an alignment to what Ghyoot (2004) found in his research and that is that the financial analysis undertaken to decide on whether to lease or own CRE is often overruled by qualitative factors, i.e. non-financial determinants. Furthermore, this also demonstrates how complex corporate real estate decisions are seeing that it is not purely subject to financial considerations, but also to subjective factors which will differ for companies, different environments, management styles, perceived market sentiment, etc.

4.4.7.2 ***Lease-Versus-Buy***

4.4.7.2.1 Non-financial determinants

This section of the questionnaire placed an emphasis, not on an ownership decision or lease decision in isolation, but rather treated ownership and leasing as mutually exclusive acquisition methods. From a non-financial perspective, location and physical characteristics were observed to be more important, compared to company policies which were found to be of less influence on the lease-versus-buy decision among the majority of respondents.

Access to highways or access roads is found to be the most important location factor, with close proximity to public transport and skilled labour tied in second place. The remaining location factor, location in a prominent area, was found to be leaning to neutral rather than important.

Physical attributes are broadly defined since the physical attributes of distribution centres and warehouses vary considerably. Since the physical attributes of a building were found to influence the lease-versus-buy decision, one can infer that this might be attributed to the specialised nature which some distribution centres and warehouses possess. A building constructed to the specific requirement of an occupier might be better suited to be owned since there might not be a market to lease such a building (Ghyoot, 2004).

The only non-financial factor which the majority of the respondents do not consider as important in the lease-versus-buy decision is company policy. 75% of the respondents who indicated that company policy might influence the lease-versus-buy decision, also indicated that they will lease these properties rather than own them. A company's policy can sometimes be regarded as a proxy for the company's culture and in certain cases demonstrate the

executive's ambitions to build an empire (Coles, Daniel & Naveen, 2006; Veale, 1989). One would therefore expect that the company policy would be regarded as important, and since it is not regarded as important, it provides some insight into the executive's influence in the lease-versus-buy decision.

4.4.7.2.2 Financial factors influencing lease-versus-buy decision

The financial factors are approached in the same way as the preceding section. We approach the lease-versus-buy decision from a financial determinant perspective and in doing so demonstrate, broadly, how respondents approach this matter. The financial position of a company plays a role in 70% of respondents' lease-versus-buy decision making which might be attributed to the high capital cost that accompanies such investment as well as restricting cash flow of a business, i.e. reducing working capital (O'Mara, 1999). Effectively, if a company is not performing well, then capital would presumably be under strain and hence the company may prefer to lease rather than buy its corporate real estate. The lack of use of mortgages (Table 3.3) as a mechanism to fund these types of properties but rather employing unsecured debt or capital also confirms that the financial position of a firm plays an important role.

In considering the local real estate conditions, the majority of respondents' lease-versus-buy decision was not influenced by these circumstances. One can deduce that since the respondents will use the distribution centres and/or warehouses for their operations, i.e. owner-occupier, the local real estate market conditions will not influence the decision drastically since the respondents will not be subject to the local real estate supply and demand. In saying that, conventional wisdom suggests that in the scenario that they choose to lease, supply and demand might potentially be to their advantage – should the supply outweigh demand (O'Mara, 1999).

80% of the respondents indicated that they make use of financial analysis in the lease-versus-buy decision. The majority indicated that they conduct an NPV analysis to compare the lease versus purchase of a distribution centre and/or warehouse. This demonstrates that financial analysis is considered important in deriving an answer to the lease-versus-buy decision. This might be attributed to the quantifiable, objective result that a financial analysis yields as appose to subjective non-financial analysis. However, as the literature suggests, the subjective, non-financial factors might overrule the objective analysis (Ghyoot, 2004) The most prevalent discount rate of the said NPV calculation is the weighted average cost of capital, which 70% of the respondents utilise. This is in line with what Redman and Tanner (1991) found WACC to be the most common.

4.4.8 COVID-19 pandemic: *Status Quo*?

The COVID-19 pandemic has seemingly has not changed how retailers approach the lease-versus-buy decision when considering acquiring distribution centres or warehouses. A caveat to this should be emphasised; retailers do not fully comprehend the impact of COVID-19 on the distribution centre and/or warehouse property sector and this might change in the ensuing months.

4.5 Research Objectives

The data and findings aimed to achieve the following objectives of the research:

- Determine what financial factors retailers consider in deciding if they should lease or buy their warehouses and distribution centres;
- Determine what non-financial factors retailers consider in deciding if they should lease or buy their warehouses and distribution centres;
- Deduce which of the two determinants (financial and non-financial) is regarded as the most important
- Provide insight into the distribution centres and/or warehouse decision-making process of listed retailers

The research demonstrated which financial and non-financial determinants guide retailers in deciding whether they should lease or buy their distribution centres and/or warehouses and also which one is regarded as the most important.

The research has, also, provided insight into how different listed retailers approach the lease-versus-buy decision and how their company structure, policy, or retail subcategory impacts their decision.

5. CHAPTER FIVE: CONCLUSION

South African retailers are reliant on Corporate Real Estate not only to grow their footprint, and by implication revenue, but also to enable them to distribute their products to their network of stores. Previous studies have demonstrated that retailers prefer leasing their stores, but no research exists which investigated whether the same principles apply to distribution centres or warehouses which they occupy, specifically in South Africa.

This research provide insight into listed South African retailers' strategy with regards to distribution centres and/or warehouse acquisition methods as well as the financial and non-financial factors which influence their decision and how important these factors are. Noticeable trend which provides a framework for South African listed retailers when confronted with the lease-versus-buy decision regarding the acquisition of their Corporate Real Estate assets, specifically distribution centres and/or warehouses, seems to be non-existent.

5.1 Introduction

This research contributes to the body of knowledge by illustrating how South African retailers, within the context of their listed red-tape and bureaucratic environment, decide how they would acquire their key CRE distribution centres and/or warehouses assets – which serve as the backbone of their business. In answering this question, this study also endeavours to ascertain which factors are given the highest regard in the decision-making process. Furthermore, we attempted to bridge the gap in the literature which indicates what financial factors are regarded as the most important factors when acquiring real estate assets.

5.2 Research Objective

In this section, we review the research objectives which this research endeavoured to achieve, as described in chapter 1, and also talks about whether these objectives were achieved.

"Determine what financial and non-financial determinants guide retailers in deciding if they should lease or own their warehouses and/or distribution centres"

This objective was achieved by reviewing previous literature and using this as a guide to set up a questionnaire for respondents to complete in order to understand what type of financial- and non-financial factors influence the lease-versus-buy decisions made by retailers. The research was specific in trying to ascertain what factors influence their decision when considering leasing or owning these assets as well as when faced with the option to choose

between leasing or buying. The analysis ranked the factors which influence these decisions and provides insight into which of these factors are considered the most important.

"Deduce which of the two groups of determinants (financial and non-financial) is regarded as the most important"

The research objective was achieved by designing a Likert-scale scoring mechanism to determine which category of influencing factors are deemed the most important and which of a lesser degree. This research showed that non-financial factors are regarded as more important than financial factors when considering purchasing or leasing distribution centres/warehouses. Existing literature fails to give consideration to non-financial factors to the same degree as financial factors which influence the so-called lease-versus-buy decision (Redman & Tanner, 1991). This research showed that failure to give the requisite consideration to non-financial factors which influence the LVB decision is a grave oversight as this research shows that non-financial factors are regarded as more important, albeit marginally, than financial factors. Ghyoot (2004) and O'Mara (1999) found that non-financial factors, with their subjective nature, have superseded certain financial analysis outcomes and further illustrates that further research is required into the influence of non-financial factors in the lease-versus-buy decision.

"Provide insight into the lease-versus-buy decision-making process of retailers"

The outcome of this research demonstrated that no measurable strategy exists which is universally accepted by listed South African retailers which dictate their approach towards acquiring distribution centres and/or warehouses, i.e. to lease or to own. The majority of the participants indicated that they lease and own these types of Corporate Real Estate, 90% and 70% respectively. The outcome demonstrates that no trend exists which favour a certain acquisition method for these kinds of Corporate Real Estate assets and given the high percentage of respondents choosing both leasing and ownership as a means of acquisition, it provides no significant insight.

5.3 Research Question

"What financial and non-financial determinants drive JSE listed South African Retailers' to lease or own their Corporate Real Estate, specifically warehouses and distribution centres"

The findings in this research answered the question of which factors, both financial and non-financial, influence retailers' decisions when faced with the lease or buy decision when

expanding their distribution and/or warehouse footprint. The factors which enjoy a higher level of importance were found to be non-financial. More specifically, the five most important factor when retailers consider ownership is i) security of tenure, ii) flexibility in size requirements (i.e. expanding and reducing space) iii) control over operating costs iv) avoidance of rental increases, and v) eave height (Table 4.46). Whereas the five most important for retailers when considering leasing is i) conserving cash (i.e. preserving liquidity), ii) lowering the cost of financing assets compared to debt financing, iii) eave height, iv) easier terms than with conventional types of debt, and vi) yard size (Table 4.47)

5.4 Research Proposition

"Retailers consider both financial and non-financial determinants in deciding if they should lease or own their Corporate Real Estate, specifically warehouses and distribution centres."

The research proposition held was proven to be true since the respondents' answers illustrated that they consider both financial and non-financial factors in their LVB decision-making process. This outcome is consistent with the literature.

5.5 Research Aim

"Provide empirical evidence which supports the notion that both financial and non-financial determinants influence JSE listed South African Retailers' decision when confronted with the choice of whether they should lease or own their Corporate Real Estate, specifically warehouses and distribution centres, as well as what these factors are."

The findings demonstrate that both financial- and non-financial factors are considered when South African, listed retailers consider acquiring a distribution centre or warehouse irrespective of the acquisition method, i.e. lease, own or a combination of the two. The research also demonstrated what those factors specifically are and how important the retailers perceive them to be.

5.6 Problem Statement

"The majority of retailers in South Africa follow a similar strategy when expanding their retail footprint. The most common acquisition method that gives effect to their expansion is for retailers to lease the majority of stores/outlets. However, from a warehouse and distribution centre corporate real estate perspective, not much insight or research exists which demonstrates what acquisition method retailers prefer nor which factors they consider when

faced with a lease-versus-buy decision. This proposed research aims to provide insight into which acquisition methods retailers prefer when distribution centres and/or warehouses are required as well as which financial and non-financial factors are considered and preferred."

The research provides some insight into the decision-making mechanisms of listed South African retailers when considering the acquisition of distribution centres and/or warehouses, but failed to deduce that a universally excepted acquisition strategy exists among these retailers, i.e. whether they prefer leasing or owning these assets. The research was able to provide insight into which financial and non-financial factors are considered in this process as well as how important these factors are perceived to be.

5.7 Concluding Remarks

We note that the low number of respondents created a limitation that is significant enough to justify further research into how listed retailers are influenced into choosing to either lease or own their distribution centres and/or warehouses. It was not possible, within our context, to increase the list of potential participants as all of the listed retailers in the five retail categories were approached to participate in this research. One can consider changing the research methodology to better accommodate this constraint or increase the respondents to include non-listed retailers.

Further research should also be done to quantify the importance as well as provide insight into the nuances of non-financial factors for listed South African retailers when deciding whether they should lease or own their distribution centres and/or warehouses.

5.8 Recommendations

5.8.1 General recommendations

i. Retailers should consider defining their distribution and/or warehouse acquisition strategy with an emphasis on being more analytical and uniform in their approach.
ii. Since non-financial factors are regarded as more important in the LVB decision-making process for retailers, a weighted scoring matrix should be used to assist the retailers in choosing whether to buy or lease distribution centres and/or warehouses.
iii. Retailers should investigate if a hybrid approach, partly owned assets in a Special Purpose Vehicle (SPV), might better be suited than a conventional lease or own approach. The factors that should be considered is how it would impact their income statement, balance sheet, working capital and debt- and credit lines.

5.8.2 Further research

i. The introduction of the new accounting standards, specifically IFRS 16, might influence retailers' LVB decisions in the future seeing that the new standards require all leases to reflect on a company's balance sheet. Therefore, no distinction is made between operating- and finance leasing. This might dramatically shift the rationale of retailers when they are confronted with the LVB decision and therefore further research is required to understand the impact of IFRS16 on the LVB decision of South African listed retailers.

ii. The limitations in the research have created an opportunity to further expand on this research's objectives by considering an alternative research methodology to better understand why certain factors are important in the LVB matter as well as the associated nuances that exist within the decision-making process.

iii. The research outcome demonstrated that the low number of respondents created a limitation which justifies further research into how JSE listed South African retailers are influenced when faced with the LVB decision in their acquisition of distribution centres and/or warehouses. An alternative research methodology could be utilised to mitigate this limitation.

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