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The Importance of the Non-Financial Determinants of the Lease versus Buy Decision for Corporate Office Real Estate in Johannesburg

School Of Construction Economics and Management

University of the Witwatersrand

Johannesburg

2017

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A research report submitted to the School of Construction Economics and Management, University of Witwatersrand, Johannesburg, in fulfilment of requirements for the degree of Master of Science (Building).

Abstract

The objective of this study is to provide empirical support to the study of corporate real estate by classifying and providing proof on the significance of the non-financial determinants of the lease versus buy decision for office real estate in Johannesburg.

By means of a logistic regression coupled to the use of a Kruskal-Wallis test, this study sought insight to company characteristics, locational and physical attributes of office real estate that could predict the lease versus buy decision for corporate real estate based on a survey involving 13 companies occupying office real estate located in Johannesburg.

The results do not show a positive correlation between company and site specific characteristics. These were not significant predictors of the lease versus buy decision for corporate real estate. The results indicate that the majority of the respondents prefer a combination of leasing and owning versus solely leasing or owning their corporate real estate.

The dataset used in this study is based on a survey that was conducted online, which involved 13 companies occupying corporate office real estate. The small sample size affected the confidence level of predicting the outcome of the decision.

This paper demonstrates the need for a broader theoretical system to comprehensively investigate the lease versus buy decision for corporate real estate, which is often limited to financial aspects, but should also include locational and physical attributes, real estate economics and it's alignment to business strategy.

This study seeks to provide an empirical contribution to the field of corporate real estate research by presenting proof on the significance of the non-financial determinants of the lease versus buy decision for corporate real estate in Johannesburg.

Keywords include: Lease versus buy, Corporate real estate, Corporate strategy, Real estate, Financial modelling, Logistic regression, Kruskal-Wallis test, Likert scale.

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Declaration

I, Jeremy John Chetty, declare that this research is my own unaided work. It is being submitted to the University of Witwatersrand, Johannesburg for a Degree of Masters of Science (Building). It has not been submitted before for any degree or examination to any other University.

Signed:_____ Date: _____

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God Bless.

Chapter 1

Introduction

1.1. Background

Corporate Real Estate Management, amongst other functions, involves acquisitions, leasing, finance, disposal, real estate strategies and development packaging of a company's real estate. (Manning and Roulac, 2001; Gale and Case, 1989; Gibler and Black, 2004; Ali, Z. et al, 2008). All companies require real estate to accommodate employees, store and produce goods and to provide services (Gibler and Black, 2004). The acquisition of a firm's corporate real estate be it by means of leasing or owning as a function of its operational requirements, is the main focus of this study.

The general use of corporate real estate should, however, not only be perceived solely as a place to conduct business or a factor of production but also as a significant financial investment that could increase the overall return of a company and in the long run increase shareholder value. The acquisition decision involves the choice of owning or leasing a company's real estate, which by implication can have a substantial impact on the aforementioned. The choice traditionally involved comparing the financial costs as well as the benefits of each option at an appropriate discount rate or at a company's required cost of capital and selecting the option that makes sense for the firm (Redman and Tanner, 1991; Ghyhoot, 2003; Barkham and Park, 2011). When the decision is made to buy real estate the most common form of the funding is derived predominantly from either mortgages or operational cash flow (Redman and Tanner, 1991). In a study undertaken by Ghyhoot, the most appropriate discount rate applied is dependent on the method of finance. If the purchase or lease is financed by means of operating cash flow, then intuitively the WACC (weighted average cost of capital) should be used. If financed by means of a loan, then the ATCD (after tax cost of debt) should be used. The RRR (required rate of return/cost of capital) is another discount rate often used but applying an appropriate discount rate should be used with care and in accordance with the prevailing circumstances.

However, as noted by Barkham and Park (2011), this decision criteria is excessively narrow as it ignores non-financial factors, which although sometimes is not quantifiable, play a significant part in the contribution of CRE to the company's bottom line. Barkham and Park

(2011) thus investigated the non-financial determinants of leasing versus owning for industrial real estate in the UK. This study is an extension as well as replication of Barkham and Park's (2011) study and will focus on the office sector.

During the course of 2015, investments in the commercial real estate sector in South Africa amounted to R18.5 billion (Jones Lang LaSalle, Q1 2016). Therefore, the real estate market has an enormous impact on the trajectory of the South African economy and is amongst the major contributors of the country's gross domestic product (GDP). Of this, finance and business services sectors contribute more than 30% of the country's GDP, which drives the demand for office space (Jones Lang LaSalle, Q1 2016).

The total size of rentable office areas within the five major metropolitan areas of City of Johannesburg, City of Cape Town, eThekwini(Durban), City of Tshwane(Pretoria) and Nelson Mandela Bay (Port Elizabeth) alone accounts for roughly 17 500 000m^2 of which Johannesburg alone comprise roughly 9 734 000m^2 (SAPOA, Q1 2016). The size of this market is comparable in size to cities such as Madrid, and greater than cities such as Brussels, Moscow and Milan. More than 500 companies in South Africa own corporate real estate, which includes international companies (Jones Lang LaSalle, 2012). Further to this, an additional 500 000m^2 of offices are under construction in Sandton alone (Samco Report 2016). Office stock in Johannesburg increased by 8% year on year since 2015, with a current development pipeline of 570 400m^2 of which, 156 126m^2 is expected to be completed by year end (Jones Lang LaSalle, Q1 2016).

Given the relative importance and the size of the office market, it is unknown how South African firms make their decisions when it comes to the leasing or owning of their corporate real estate within the office sector. It is thus important to determine how much these decisions strengthen or weaken business goals within the South African office market.

1.2. Problem statement

In spite of its relative size and importance, not much research appears to have been done on how corporate real estate decisions are made for all asset types in general and specifically in the office market.

1.3. Importance of the problem

Real estate by nature is considered specialised and incorporates both tangible as well as intangible aspects, which are often ignored when corporates decide to lease or own their corporate real estate (Ghyoot, 2003; Barkham and Park, 2011). Unfortunately not much has been done in the form of research on the intangible aspects of real estate as the bulk of the previous literature focussed on the financial determinants when arriving at decision to own or lease corporate real estate (Ghyoot, 2003; Barkham and Park, 2011). As previously stated, centring the decision solely on financial considerations could be misleading as property is specialised in nature and contains both tangible and intangible elements and unlike tangible aspects, intangible aspects such as locality; the characteristic of the property; business type; the physical attributes of the property; the overall characteristic of the company and the size of the firm cannot be accounted for in cash flows when the acquisition decision is made (Ghyoot, 2003; Barkham and Park, 2011). This approach may have been the root cause of the problem, which has exacerbated the complexity of the lease versus buy decision when acquiring corporate real estate, as compared to ordinary tangible aspects. This as a result could also be the reason why the topic has received less attention in literature and practice (Ghyoot, 2003; Barkham and Park, 2011).

What appears to be evident is that there is still insufficient empirical evidence supporting the non-financial factors that companies should consider when making corporate real estate decisions (Lindholm, Gibler, et al. 2006). These resulted in the distortion in the decision making process and appears to be flawed by traditional models ,which were solely based around a comparison of discounted cash flows based on the company's appropriate cost of capital (Ghyoot, 2003; Barkham and Park, 2011). This study is aimed at empowering decision makers to make the necessary non-financial corporate real estate acquisition choices that are aligned to the operational objectives of the business.

1.4. Aim and Objectives of the study

The aim of this study is to provide empirical support for the study of corporate real estate by categorising and providing proof on the significance of the non-financial determinants of the lease versus buy decision for office real estate in Johannesburg.

The objectives of this study are to:

1. Determine and present the non-financial determinants of the lease versus buy decisions for corporate office real estate in Johannesburg.

2. Determine and present the relative importance of the non-financial determinants of the lease versus buy decisions for corporate office real estate in Johannesburg.

1.5. Research questions

This study aims to investigate the following research questions;

1. What are the non-financial determinants, which need to be taken into account when deciding to lease or buy corporate office real estate within the Johannesburg metropolitan area?
2. What is the significance of the non-financial determinants of the lease versus buy decisions for office corporate real estate in Johannesburg?
3. Are there differences in opinion between companies whose main operations are sales, financial services, professional services and other services in relation to location preferences and physical attributes when leasing or buying corporate real estate?
4. Are there differences in opinion between people who hold different positions in the company in relation to location preferences and physical attributes when leasing or buying corporate real estate?
5. Are there differences in opinion between companies with or without corporate real estate departments in relation to location preferences and physical attributes when leasing or buying corporate real estate?
6. Are there differences in opinion between companies who have an in-house corporate real estate department as opposed to outsourcing in relation to location preferences and physical attributes when leasing or buying corporate real estate?

1.6. Hypothesis

Location, Site specific and Company specific variables are important predictors to the probability that a firm will likely own or lease corporate real estate.

1.7. Scope and limitations of the study

The study is an adaptation and extension of the study undertaken by Barkham and Park, (2011) on companies occupying industrial space in the United Kingdom, where this study is extended to office occupiers in Johannesburg. The main focus of the study pertains to the non-financial determining factors of the lease versus buy decision for corporate office real estate in

Johannesburg. The target population of the study are companies that lease and own corporate office real estate for operational requirements and excludes companies, which are primarily in the business of real estate. The study focusses on non-real estate companies occupying office space such as banks, service providers and consulting firms located in the Johannesburg metropolitan area.

A major constraint comes from limitations pertaining to the survey plus the fact that this study is unable to cover decision makers outside of the Johannesburg office market.

Another major limitation of this study stems from the fact that not all companies identified or sampled are willing to respond to the questionnaire or are willing to partake in interviews. As with case studies, companies find it problematic to participate as there is a perception that participation will have an impact on the company's competitive advantage. Albeit that Johannesburg is the driver of the economy nationally, the results from different companies is not necessarily a true reflection of the stance of all corporates within a South African context. Further studies may have to be undertaken in this regard.

1.8.Report Layout

This report contains five chapters. This chapter provides a contextual background to the research area of the study, whilst the second chapter reviews existing literature on the leading factors of the lease versus buy decision for corporate real estate. The third chapter focusses on the research design and methodology, which is employed in this study; the fourth chapter deals with the analysis of the data collected and discussion on the findings; whilst the last chapter focuses on the conclusions, their implications and recommendations for future research.

1.9.Assumptions

The assumption is that corporates place more reliance on the financial determinants when a decision is made to lease or own corporate real estate and that the non-financial determinants play a lesser role in the decision making process.

The assumption is that all corporates use real estate in order to produce or provide a service and that the real estate component is pertinent to their core functions.

The information sourced from respondents of the study is a true, unbiased consideration of their understanding and views on the elements driving the lease versus buy decision.

Chapter 2

Literature Review

2.1. Introduction

Whilst the general view is held that the use of corporate real estate is a function of production, the trend is emerging that corporate real estate, in essence, could contribute to the underlying growth of corporations that involves a significant financial investment, which in turn provides a competitive advantages to corporates (Gale and Case, 1989). The need for corporates to own Corporate Real Estate is therefore largely underpinned as a function of production as opposed to the notion that it is an asset class that could assist the overall performance of the organization (Ali, Z. et al, 2008).

According to Lindolm and Black, 2006, shareholder value theory dictates that the aim of corporations is to maximize the return of their shareholders, which is measured by the sum of the dividends and capital gains, given a level of risk or by reducing the risk with the same level of income. They are of the view that there are two basic approaches which increases shareholder value, namely revenue growth and productivity.

Real Estate strategy according to Gibler, K.M and Lindholm, A.L. (2012) can contribute to the revenue growth element of maximizing shareholder value by inclusion of the following strategies (1) increasing the value of the CRE; (2) encouraging organizational brand, sales and marketing; (3) inspiring and supporting creativity and innovation; (4) supporting environmental sustainability and lastly by (5) augmenting employee wellbeing.

According to the aforementioned authors, the production growth element which corporate real estate strategy may contribute toward in order to maximize shareholder growth, can boosted by (1) Enhancing employee satisfaction and wellbeing; (2) aiding flexibility and (3) decreasing real estate related costs.

It is within this context that the importance and benefits pertaining to the intangibility/non-financial elements of an asset class, within a CRE context, are often underestimated, which could contribute in increasing overall return and in the long run increase shareholder value.

Of the eight aforementioned value enhancing strategies, there are two elements which are particularly relevant to the lease versus buy decision, namely increase in the value of CRE (decision to lease or purchase) and aiding in flexibility (decide to lease instead of own).

There is now, however, a paradigm shift from the notion that Corporate Real Estate is perceived as a pure tangible asset to the belief that it may provide benefits as an intangible asset (Lindholm and Black, 2006). The general use of corporate real estate should therefore not only be perceived as a place to conduct business or a factor of production but also as a significant financial investment that could increase overall return of the company and in the long run increase shareholder value.

All companies require real estate to accommodate employees, store and produce goods and to provide services (Gibler K.M and Black. R.T, 2004). There are three elements that are considered critical to the operation of a corporation comprising land, labour and capital (Ali, Z. et al, 2008). The land component as defined by Brown and Arnold (1993) comprise the use of real estate, which is either leased or owned, that is required in order for corporates to achieve their operational and corporate goals.

Corporate real estate as defined by Brown and Arnold (1993) is the use of the land component that is either leased or owned, which is required by corporates to achieve their operational and corporate goals. Many authors, since then, have come up with different permutations to the definition but the most appropriate definition was formulated by Ali et al (2008). The authors define corporate real estate "as a functional unit in an organization, which is responsible for the real estate asset holdings and their activities, and supports the organization to achieve its business objectives". Corporate real estate management (CREM) was defined by Brown and Arnold (1993) as "the optimum use of all real estate assets utilized by a corporation in pursuit of its primary business mission".

Ali et al (2008) cites Wheelen and Hunger's (2000) definition of corporate strategy as "a company's overall direction in terms of its general attitude towards growth and the management of its various businesses and product lines".

The sourcing of a company's corporate real estate for operational purposes comes in two key forms, namely leasing and ownership. Delport (2008) defines ownership as a "real right which, in principle, confers on the owner absolute control over his property". The significance of ownership can be found in the fact that the owner has the right to possess and occupy the property. However, it is possible for a person to own the property without occupying it, i.e. where the owner lets or leases his property to a tenant (Delport, 2008).

Delport (2008) further defines a lease as a "contract to let or hire immovable property". It is considered a contractual arrangement between the landlord /lessor and the tenant/ lessee, whereby the landlord binds him to grant the tenant temporary use and enjoyment of the premises, in part or in whole, in return for rent or a payment. (Delport, 2008).

2.2. Corporate Real Estate Management

2.2.1 What activities constitute corporate real estate management?

Corporate Real Estate Management involves, finance, miscellaneous activities; real estate strategies, property management, facilities management, market analysis, development packaging, brokerage and property decisions which includes acquisitions, leasing and disposal of a company's real estate. (Manning and Roulac, 2001; Gale and Case, 1989; Gibler and Black, 2004; Ali, Z. et al, 2008).

The CREM role therefore encompasses daily operational management as well as strategic long term planning and value add to CREM. The decision to lease or own corporate real estate is therefore critical to the function of CREM and requires the manager to be a property specialist with strong financial and property management skills (Ali, Z. et al, 2008).

2.2.2. The strategic choices facing the CRE manager at the acquisition stage

The decision to lease or own corporate real estate forms a critical part of corporate strategy as it could have a positive or negative impact on the performance of the company. The decision to buy or lease corporate real estate typically begins with the analysis of the cash-flows at a company's required cost of capital (Barkham and Park, 2011). The decision to lease or own its operating space is therefore one of the most prudent strategic decisions an organization must make (O'Mara, 1999).

Ali, Z et al (2008) argues, through investigations by Scheafers (1999) that corporate real estate has received less attention when compared to the other two elements of corporate strategy, namely labour and capital. As a result, the land component in the strategy of the organization was treated as an overhead cost similar to that of "stationary" (Zeckhauser and Silverman, 1983). This is indicative of the notion that corporations view corporate real estate as a factor of production and not as a product that can realize value on the sale thereof (Gale and Case, 1989; Ali, Z. et al, 2008).

However, according to Haynes (2012) there should be linkages between the organization's strategic operational goals and that of its corporate real estate strategy. Haynes points out that

optimal performance and productivity can only be achieved once there is an alignment to the corporates' strategy decisions and corporate real estate strategy, which will result in enhanced value creation and corporate performance (Haynes, 2012).

Traditionally senior management made the corporate real estate decisions with the corporate real estate manager following instructions from senior management. (Ali et al, 2008). The authors are of the opinion that should organizations wish to extract maximum benefit from their real estate, the CRE decision making process requires integration from various departments to represent a solution suited to the organization as a whole". Manning et al, (1996) confirms the aforementioned statement by citing work done by Arthur Anderson (1993) that corporate real estate managers often complain that senior executives do not give them the necessary authority to make strategic corporate real estate decisions in order to improve shareholder value. The authors also state that corporate real estate managers will find it difficult to bridge the gap between themselves and senior management on how to contribute strategically to the objectives of the organization. This, they cite, can only be done when they "learn the specific concerns and objectives of their companies from bottom up" approach (Manning et al, 1996). Hence, there needs to be a stronger alignment between corporate real estate strategy decisions to that of the organization's corporate strategy, in order to derive optimal benefit (Haynes, 2012). The relevance of the decision making process is to highlight the fact that parties who have the necessary knowledge in the property arena will be better equipped to make the decision to lease or own corporate real estate.

Another determinant that corporates often ignore is the strategic benefits corporations may derive from having a corporate real estate strategy in place. In this context it is important to note how corporate real estate strategy can contribute to the organization's overall competitive advantage. According to Barkham and Park (2011) there has been a paradigm shift from corporate real estate being perceived as a simple supplier of space to a strategic means of improving the company's long term strategic growth. When applied to corporate real estate, the authors state that non-financial determinants such as "superior location" and superior access to customers may provide companies with a sustainable long term competitive advantage.

2.2.3. The lease versus buy decision

Di Pasquale and Wheaton (1992) divides the real estate market into two "inter-related markets" namely the "real estate space market" and the "real estate assets market". They further state

that “purchasing an asset and purchasing the use of the assets” realises when the organisation has determined its operational requirements and the quality of the space needed. The sourcing of a company’s corporate real estate for operational purposes therefore comes in two key forms i.e. leasing and owning.

In corporate real estate the fundamental norm is that companies are not in the property game and that its core focus should be on its operations (Ghyhoot, 2003). As Corporate Real Estate was historically viewed as a cost of production, ownership was historically reported in the financial reports at original cost less depreciation. The value of the asset was therefore usually reported at book value less depreciation and not at market value, which implies that the value of the real estate was often understated (Gale and Case, 1989). Unfortunately, and as a result of the aforementioned, the lease versus buy decision has been omitted from textbooks and according to Ghyhoot (2003), the reason for this could be found in the fact that real estate is considered specialized in nature, which makes it difficult to conceptualize into principles.

O’Mara (1999), quoting Schendler (1997) points out that the decision to lease or buy space is probably the most critical investment decision companies have to make, as the decision extends beyond the balance sheet (which is reflective of financial strategy). It is with this in mind that companies tend to discard the relevance of non-financial determinants when the decision is made to lease or own corporate real estate (Barkham and Park, 2011).

O’Mara (1999) proposes a much larger structure when deciding to lease or own, and that the framework in the decision making process should be extended to include four principles namely: characteristics of the required facility; company characteristics; the financial position of the firm and real estate economics.

Ghyhoot,(2003) cites the following advantages and disadvantages of owning corporate real estate:

2.2.4. Advantages of owning CRE

- The owner may develop when there is no stock available, which is specific to the company’s operations
- Cost of management can be controlled
- The corporates needs and image can be catered for with customised designed space
- There is control of the asset by the owner

- Potential capital appreciation accrues to the owner
- Certain asset types attracts tax incentives
- Interest, opex and depreciation are tax deductible
- The owner can earn additional income from sub-letting space not required by the firm
- Interest payments can be fixed unlike rent, which is subject to increases and instabilities caused by inflation
- Over the long run cost of occupancy in owning is less than that of leasing
- As the owner is not obliged to relocate it guarantees long term sustainability of operations
- Where institutional investors are disinclined to invest in a specific area, the owner may choose to develop

2.2.5. Disadvantages of owning CRE

- Much needed capital which could be used towards profitable operations is tied up in owning property
- Liabilities on the balance sheet may be over inflated, which can have an impact on the performance indicators of the business
- Owning property attracts management responsibilities; which extends to where there are other tenants in place
- Owning real estate may distract management from its primary operational duties
- Liquidity is diluted as capital costs are normally high
- Assets, which increase in value, are carried at book value may lure bids to take over the business
- There may be unproductive use of space
- Market risks may have an impact on the residual value of the property

Ghyhoot, (2003) cites the following advantages and disadvantages of Leasing:

2.2.6. Advantages of leasing CRE

- The company can relocate if flexibility in the use of space is required
- The company is not tied to long term commitment relating to the use of space if it wishes to test the location of its operations
- It is not a precondition to make use of all the space, nor is it a necessity to develop the entire site
- There is flexibility to increase or decrease the space required
- Leasing allows for occupation of space in a prime node or building
- Transactional costs associated with ownership are avoided
- Maintenance of the property associated with ownership are avoided
- There is more efficient use of space when a property is leased
- Capital invested in property can be redeployed to more profitable operations
- Opex can be deducted from tax
- Net profits are reported more accurately as property costs are included in the profit and loss accounts
- Capital is freed up which increases liquidity, which can be beneficial to companies with high operational costs

2.2.7. Disadvantages of leasing CRE

- Flexibility is restricted by onerous clauses in the lease.
- Flexibility to effect renovations and extensions to the property are at the owners' discretion
- If there is no option to sub-lease, the lessee is contractually bound to pay the lease payments
- The lease agreement is normally subject to rental review, whilst the owner has the option of fixing interest payments
- The lessee has no right to capital appreciation of the property on expiry of the lease

- There is no control over neighbouring tenants

The lease versus buy decision is driven by financial and non-financial considerations (Ghyhoot (2003). The following paragraphs explain these in sequence.

2.2.8. The financial determinants in the LVB decision

As stated previously, Corporate Real Estate was historically viewed as a cost of production; ownership was historically reported in the financial reports at original cost less depreciation. The value of the asset was therefore usually reported at book value less depreciation and not at market value, which implies that the value of the real estate was often understated. Should the CRE appreciate, the disposal thereof could be seen as a source of cash flow and earnings, which could impact positively on profits, earnings and shareholder distribution (Gale and Case, 1989).

When a decision is made to purchase real estate, the most common form of funding is derived from either mortgages or operational cash flow (Redman and Tanner, 1991). Either way, the purchase of real estate ties up much needed cash flow, which could be invested in the operational growth of the business. Leasing, according to Ghyhoot (2003) is prudent when the business needs cash flow for their operations or where there are financial constraints applicable to the purchasing of real estate. This is further corroborated by a study undertaken by Lasfer, (2007) where his findings confirm that corporations who lease their real estate "reduce their debt, to finance their growth prospects, and to conserve liquidity, namely cash", which allows companies to grow faster. Further to this, his findings come to the conclusion that "Companies that lease appear to hold more cash and have better cash conversion periods than freehold companies, suggesting that companies that lease manage their operating cycles more efficiently".

The financial decision to own or lease corporate real estate is considered a complex decision and normally begins with the analysis of the cash-flows at an appropriate discount rate or at the company's required cost of capital (Redman and Tanner, 1991; Ghyhoot, 2003; Barkham and Park, 2011).

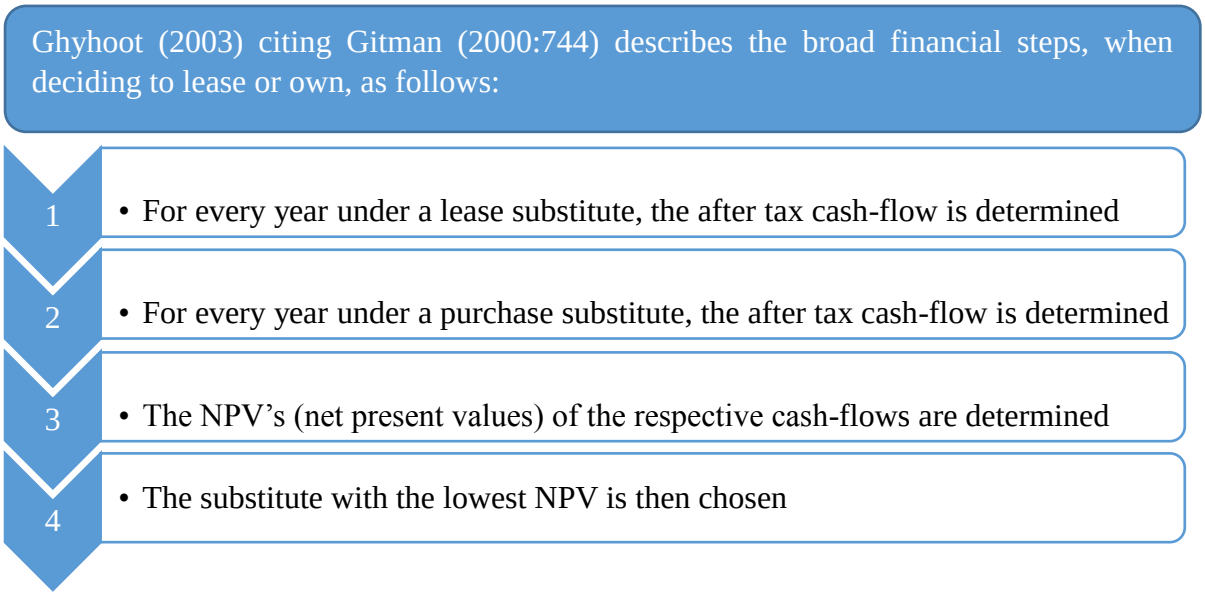


Figure 2.1: Financial steps in the LVB decision

In practice this comparison may present its own challenges in that rental, operating expenses, mortgage obligations, tax considerations, depreciation, capital gains tax and residual values/sale considerations have to be projected into the future (Ghyhoot, 2003).

Ghyhoot citing a study undertaken by Nourse, in 1990 reveals, that more than 80% of firms consider financial determinants to be the driving force behind the decision to own or lease their corporate real estate. The aforementioned study further reveals that if there is no difference in leasing and buying, then the implication is that the NPV of cash flows post analysis should be equal. A danger however exists that the outcome may be skewed in favour of leasing if the incorrect approach is used when determining the residual value. i.e. using the depreciated cost of acquisition as opposed to the market value of the property.

According to Ghyhoot the most appropriate discount rate applied is dependent on the method of finance. If the purchase or lease is financed by operating cash flow, then intuitively the WACC (weighted average cost of capital) should be used. If the lease or purchase is financed via a loan, then the ATCD (after tax cost of debt) should be used. The RRR (required rate of return/cost of capital) is another discount rate often used but applying an appropriate discount rate should be used with care and in accordance with the prevailing circumstances.

The most common financial benefit stemming from the decision to lease or buy, according to a study undertaken by Redman and Tanner (1991), is the ability to conserve cash-flow and use

it operationally to grow the company. The second highest ranking financial benefit according to their study, is the tax benefit derived from the decision. Also, the ability to leave operating leases off balance sheet, according to Redman and Tanner (1991) is normally an attractive proposition to companies, as there is no need to capitalise the lease on the balance sheet.

Lastly the financial position of the company can have an influence on the decision to lease or own corporate real estate. Companies are often in a position to secure debt at lower rates to that of developers. Therefore by implication, companies with better credit ratings have the ability to source debt at lower rates as opposed to developers, which may facilitate owning. The higher finance costs charged to developers are often factored into lease agreements, which may result in higher rentals charged to the tenant. (Ghyhoot, 2003; Barkham and Park, 2011). Alternatively companies with higher capital cost relative to that of developers and landlords may prefer to lease. (Barkham and Park, 2011).

According to Ali et al, (2008) quoting Weatherhead (1997) the following can be considered as financial determinants of leasing and owning corporate real estate:

2.2.9. The financial determinants for leasing CRE

Less capital is required as opposed to the substantial capital outlay required when owning CRE; the size of non-liquid capital assets can be limited and the choice of cheaper or more expensive locations is at the discretion of the lessee.

2.2.10. The financial determinants of owning CRE

Rent increases are avoided whilst long term obligations to lease conditions are circumvented. The likelihood of capital appreciation above inflation is a reality as property is an asset class that is expected to appreciate in general. There is a propensity for long-term development prospects if the property has unutilised potential. Accessibility to grants and tax concessions and capital allowances are financial benefits, which are regulated in most matured markets, whilst management costs can be regulated through economies of scale. Costly investment in plant and machinery can be safeguarded. Lastly joint venture programmes may be facilitated which can directly translate into improving the financial stature of the company.

2.2.11. The non-financial determinants of leasing versus owning CRE

Barkham and Park's (2011) study postulates that, whilst the financial aspects of the lease versus own decision is considered critical, it cannot be viewed in isolation. They emphasise that as

with other tangible assets, the decision to lease or own usually starts with comparing cash flows which is "discounted by the firms appropriate cost of capital" (Barkham and Park's, 2011).

On the other hand, real estate, according to Barkham and Park (2011) has intangible elements to it, which are often not considered when corporates decide to lease or own their corporate real estate. They reiterate the fact that the decision to lease or own should be extended to a broader framework, which should not only include finance but also intangible elements such as corporate strategy and real estate economics. This confirms O'Mara's (1999) view to include four principles into the decision namely, characteristics of the required facility; company characteristics; the financial position of the firm and real estate economics.

The characteristic of the property required is a factor that can play an important role in the decision to lease or own. Companies requiring high levels of customisation/specialisation would prefer to own their real estate, whilst companies that require generic space will opt to lease (Barkham and Park, 2011). Office properties, on the other hand, which are generic in nature appeals to the greater market and hence is easier to find and therefore easier to let (Lind and Lundstrom, 2010). Lind and Lundstrom (2010) are of the opinion that it is easier to effect changes to the improvements when owning, whilst it is a requirement for tenants to negotiate with the landlord, should they wish to effect changes, when letting a property. This according to the authors weakens the bargaining power of the tenant.

As previously stated a firms choice of space is closely related to the business type but it is also assumed that property "can be treated as a homogenous commodity and that the consumers of space are also homogenous" (Leishman, C. and Watkins, C. 2004). These authors identify service sectors in the office classes as:

1. Professional services;
2. Financial services;
3. Recruitment and training;
4. Business services;
5. Offices linked to construction and manufacturing firms
6. Other

The questionnaire used in this study is an adaptation and extension of the instrument developed by Barkham and Park, (2011). The adaptation of the questionnaire consists of replacing the

physical attributes and sector types of industrial space with that of office space, which is referenced against existing literature. The following paragraphs highlight these.

On the physical attributes, a survey undertaken by the Research Bulletin of the Centre for Real Estate Studies (CRES, 2005) reveals that image and prestige are rated as the most important pull factors when the office choice decision is made.

A more recent study undertaken by Remoy HT, et al (2007) using the Delphi approach reveals that in terms of ranking, the highest pull factors for office choice includes car parking; exterior appearance; user recognisability, space layout and flexibility.

The length of tenure is another characteristic that could influence the decision to lease or own corporate real estate as companies who have long term operational requirements would prefer to own, whilst companies with short term operational requirements, would prefer to lease (Barkham and Park, 2011). Leasing will be prevalent in instances where the period of use is say 5yrs, whilst a 15yr -20yr use period will imply a tendency to own. Where buildings are fully occupied (optimally used) the propensity leans towards ownership, whilst partial occupation of a building may lead to leasing the premises. (Ghyhoot, 2003). Ghyhoot (2003) further states that timing is another factor that should be incorporated into the decision making process; where the use of the facility required is immediate, leasing or owning may be the only option.

The overall characteristic of the company plays a major role in the decision to lease or own corporate real estate. Established companies with a stable track record of sales and demand for its products and services may elect to own (Barkham and Park, 2011). Availability of competitive products and services in the market, which may lead to volatility in demand and supply, will on the other hand, entice firms to lease. Where companies wish to control their physical environment, the tendency would be towards owning. This may even extend to purchasing the surrounding land (Ghyhoot, 2003).

The size of the firm, according to Barkham and Park, (2011) is another characteristic that needs to be taken into account. The authors suggest that size can have a bearing on the risk, firstly the more geographically widespread the operations, the better the risk bearing capacity, as geographical diversification and locations have the propensity to absorb the volatility and fluctuations in real estate markets. Secondly they are of the opinion that sizeable companies

"can better absorb the required capital for purchasing real estate" (Barkham and Park, 2011). This according to the authors will have a profound effect on the decision to lease of own corporate real estate.

The performance of the local market is another crucial factor that can influence the decision to lease or own corporate real estate. The availability of space commensurate to the operational requirements of the organisation may not be available for leasing, in the market, which may force the company to develop and own the space. Similarly a building required by an organisation may not be available for purchase and in this instance, leasing may be the only option (Ghyhoot, 2003). Lastly, volatility in the market affects the residual value of the property. There is an implied risk of dilution in value and in such instances the propensity will lean towards leasing.

According to Ali et al, (2008) quoting Weatherhead (1997), the following can be considered as non-financial determinants for owning and leasing corporate real estate:

2.2.12. Non-financial determinants for Owning

- Security
- Where location is unique
- Design of building can suite the requirements of the owner
- Location is guaranteed therefore plant can be fixed over the long term
- Expansion opportunities can me guaranteed
- Autonomy in the choice of property management
- Supply of skilled and competent labour
- Where there is no suitable property available for rent

2.2.13. Non-financial determinants for Leasing

- Flexibility of movement; especially if expansion is anticipated
- Risk of being tied to an obsolete building is mitigated
- Floor space can be reduced if less space is required
- Flexibility in choice of letting space

- Additional services are available

2.3. Methodologies in used previous studies

Albeit that, studies within this area of research are limited, the most recent study pertaining to research methods on the non-financial determinants affecting the decision to lease or own corporate real estate was undertaken by Barkham and Park (2011), which focussed on the industrial sector in the UK. The authors drew their conclusions by means empirical research obtained from 2,248 UK firms, in 1998. By means of a logistic regression model (due to the independent variables being binary in nature), they explore a range of site specific and company specific characteristics. Site specific characteristics includes size of the site, locality and physical elements of the site, whilst company specific attributes are extended to size of the company (Barkham and Park 2011). Their results are predominantly consistent with the hypothesis, which they formulated.

Research has been undertaken on the financial determinants affecting the decision to lease or own corporate real estate, see for example Benjamin et al, (1998); Deng & Gyourko , (2000); Ghyhoot, 2003; Lasfer, (2007), Ali et al, (2008); Lind and Lundstrom, (2010) and Gordon, (date unknown). Some of the methodologies employed in this arena of research include:

- Empirical results based on case studies (Ghyhoot, 2003 and Lind & Lundstrom, 2010).
- Results from other research is reviewed and presented (Benjamin, De la Torre & Musumec, 1998).
- Financial modelling (Gordon, date unknown).
- Integration of literature and a case study. The researcher makes use of semi structured interviews to obtain information (Roulac, 2003).
- Hypotheses testing (Lasfer, 2007).
- Two stage regression approach with a simple capital asset pricing model (Deng & Gyourko, 2000).

I have decided to replicate and extend Barkham and Park‘s (2011) methodology with the only reservation being that their study was applicable to that of the industrial sector in the UK, whilst this study focusses on the office sector in a South African context. Coupled to the aforementioned, this is the only research undertaken relating to the topic under discussion and

refinement thereof will be tested against results obtained from the survey. Barkham and Park‘s (2011) findings shows a significance for locational characteristics, size of operations and physical attributes of the real estate, whilst company size was less influential as originally envisaged. Evidence of company choices surfaced strongly, whilst sectorial differences were insignificant (Barkham and Park, 2011).

Further to this, it must be noted that the primary methods used in this field of research entails conducting interviews and carrying out surveys. The results from the surveys and interviews are then complemented by theoretical concepts from other disciplines and areas of research. This study attempts to refine and extend the instrument as developed by Barkham and Park to try and explain the role that non-financial determinants play in the decision to lease or own office corporate real estate. What can be deduced is that there is limited theory in the field, i.e. the role non-financial determinants play in the decision to lease or own corporate real estate and the outcome of the survey is ultimately the decisive factor in the approach used.

2.4. Conclusion

The literature review, as sketched above, highlights the point that even though financial determinants are considered to be central to the lease versus buy decision, in corporate real estate, the decision to lease or own should be extended to include non-financial determinants. This incorporation could even end up being the decisive factor when the decision is made.

With other assets classes, the economic determinants are the principal drivers in the lease versus buy decision. With real estate however, non-financial determinants make the decision more complex (Ghyhoot, 2003).There appears to be a gap in the literature, the role which non-financial determinants play when the decision to lease or own corporate real estate within a South African context is made.

A previous study on the non-financial determinants affecting the decision to lease or own corporate real estate was undertaken by Barkham and Park (2011), which focussed on the industrial sector in the UK. This study is closely related to the study undertaken by Barkham and Park (2011) and is a straight replication and extension of their study but within a South African context. This study focusses on the non-financial determinants, which affect the lease or buy decision in the office sectors within the Johannesburg Metropolitan area, whereas Barkham and Park’s study focussed on the industrial sector in the United Kingdom.

The observations from the above study illustrates that although studies are predominantly conducted in the field of the financial determinants' contribution to the lease or own decision, there is a gap in the literature pertaining to the impact that non-financial determinants have in the decision making process. Real Estate has non-financial aspects to it – for example: it has marketing value; locational preferences and access to the site; physical attributes of site; size of operation; proximity to resources; access to public transport; lease term and brand image. By including non-financial determinants in their strategic decision making process, the findings and guidelines will assist and add value to organisations who owns and lease offices within a CRE context.

Further to this there are physical risks such as poor design, obsolescence and regulatory risks, which could be factored into the decision to lease or own (Huffman, 2002), which is another potential area of study that could be undertaken in a South African context. A study on the role financial determinants play in the decision to lease or own real estate is another area of study, which needs to be undertaken in a South African context.

With the assessment of residual risk when deciding to lease or own corporate real estate, several reversionary alternatives may be an option; a sale and leaseback transaction being one of them (Huffman, 2002). Whether there are non-financial determinants, which should be considered when deciding to enter into this type of agreement, is another study that can be undertaken within a South Africa context.

Determining the impact that non-financial determinants play in the decision to lease or own corporate real estate, is the main focus of this research report.

Chapter 3

Research Design and Methodology

3.1. Research Methods used in this Problem Area

As stated previously there appears to be a gap in the literature, i.e. the role that non-financial determinants play in the decision to lease or buy corporate real estate, which remains an unexplored phenomenon; more specifically in Johannesburg. A previous study on the non-financial determinants affecting the decision to lease or own corporate real estate was undertaken by Barkham and Park (2011), which focused on the industrial sector in the UK. This study focusses predominantly on the non-financial determinants, which affect the decision to lease or buy Corporate Real Estate in the office sectors within the Johannesburg Metropolitan area. Barkham and Park uses secondary data, which they apply to a logistic regression model in order to analyse and present their results.

Previous research on the decision to lease or buy predominantly focused on the acquisition of equipment where financial determinants were the key drivers in arriving at a decision. Research has been undertaken on the financial determinants affecting the decision to lease or own corporate real estate, see for example Benjamin et al, (1998); Deng & Gyourko , (2000); Ghyhoot, 2003; Lasfer, (2007), Ali et al, (2008); Lind and Lundstrom, (2010) and Gordon, (date unknown).

Most of the studies were quantitative, involving a number of different approaches. Some studies used secondary data, whilst others used primary data as instruments for their studies. The above-mentioned studies pertaining to CRE used both quantitative and qualitative research methods to evaluate their research, where questionnaires, surveys or observations from other research were used to draw conclusions. In some research papers primary or secondary data were used as the method of collecting data. For example Deng & Gyourko, (2000) uses secondary data from NYSE, AMEX, and NASDAQ monthly stock files, which were analysed by the use of a two stage regression model. In other studies, results from other research were reviewed and presented (see Benjamin, De la Torre & Musumec, 1998). Ghyhoot (2003) and Lind & Lundstrom (2010) use empirical results based on case studies as primary research methods, whilst Roulac (2003) use semi structured interviews as a primary source to collect data.

There is an element of caution that researchers need to be mindful of when it comes to the use of case studies in that the reliability of data can be questionable. Researchers in this instance will be unable to state with confidence that the sample of companies selected, used in case studies, is considered a true representation of the population. Lasfer (2007) on the other hand, uses hypothesis testing as a primary research method. The hypothesis was tested using market values of 2343 UK based companies between 1989 to 2002. This method however carries more weight when it comes to determining the credibility of the independent variables.

As stated above, studies relating to the non-financial aspects in the decision to lease or buy CRE are limited; the most recent study on the non-financial determinants affecting the decision to lease or own corporate real estate was undertaken by Barkham and Park (2011), which focussed on the industrial sector in the UK. The authors drew their conclusions by means empirical research obtained from 2,248 UK firms, in 1998. By means of a logistic regression model (due to the dependent variables being binary in nature), they explore a range of site specific and company specific characteristics. A model was constructed that used independent variables in order to predict dependent variables through probability theory. Site specific characteristics includes size of the site, locality and physical elements of the site, whilst company specific attributes are extended to size of the company and the inclination to own corporate real estate (Barkham and Park, 2011). Their results were predominantly consistent with the hypothesis, which they formulated. Barkham and Park, 2011 uses an empirical approach to denote proof of the significance of non-financial determinants in the lease versus buy decision. Quantitative methods, by means of surveys and questionnaires, were used to determine the probability of owning or leasing CRE, where independent variables determine the probability of the outcome (Barkham and Park, 2011). The methodology used in this study and most empirical studies on the lease versus buy decision use questionnaires, as questionnaires are less subjective as opposed to observations.

This study is designed to replicate and extend Barkham and Park‘s (2011) research and focusses on the office sector in a South African context. Coupled to the aforementioned, this is the only research to my knowledge undertaken in a South African context and refinement thereof is tested by means of results obtained from a survey conducted in the office sector.

As stated earlier, it must be noted that the primary methods used in this field of research entails conducting interviews and carrying out surveys. The results from the surveys and interviews

are then complemented by theoretical concepts from other disciplines and areas of research. This study attempts to refine and extend the model as developed by Barkham and Park, (2011) and tries to explain the role that non-financial determinants play in the decision to lease or own corporate real estate.

3.2. Research Paradigm

A research paradigm has been defined as a method "of examining social phenomena from which particular understanding of these phenomena can be gained and explanations attempted" (Saunders et al, 2012, p141) or "as the basic belief system or worldview that guides the investigator" (Guba & Lincoln, 1994). Guba and Lincoln's definition was further extended by Wahyuni, 2012 who describes a research paradigm as "a set of fundamental assumptions and beliefs as to how the world is perceived, which then serves as a thinking framework that guides the behaviour of the researcher". Scientific research paradigms are overall theoretical structures within which some scientists work, i.e. a paradigm is a world-view or "a set of linked assumptions about the world which is shared by a community of scientists investigating the world" (Deshpande, 1983).

Science is therefore thought of as being value-free, centred on unbiased and empirical evidence alone; there is "no place for culture's values or the researcher's personal values or beliefs" (Ashley and Boyd, 2006 citing Neuman 2003). The key paradigms associated with the undertaking of scientific research are quantitative and qualitative paradigms. Quantitative paradigms are related to the "rational and objective measurement of observable phenomena, while qualitative methodology focuses on assessment of subjective phenomena as ideas, opinion and pattern" (Ashley and Boyd, 2006). A way of differentiating between quantitative and qualitative research is to make a distinction between numeric data, which uses numbers as opposed to non-numeric data which uses words, images or other similar material (Saunders et al, 2012). Therefore, in simple terms it can be said that, the objective of quantitative paradigms is to describe, whilst the objective of qualitative paradigms is to understand. However these definitions are narrow, in nature, as some research will entail a combination of the two paradigms and these need to be understood through their relation to "philosophical assumptions, to research approaches and strategies" (Saunders et al, 2012, p161).

The research philosophy associated to quantitative research is positivism, whilst the research approach used is that of a deductive approach, where the focus is on the use of data. Key to this

approach is that quantitative research aims to examine the relationship between variables which can be measured numerically and analysed by means of statistical techniques. The strategy employed in term of the collection of the data is normally by means of experimental survey based methods, which is usually administered by means of structured interviews or surveys (Saunders et al, 2012).

The choice of the most suitable paradigm for a research project depends on the objective of the research. The positivist approach based on the above, is thus judged to be the most appropriate philosophy applicable to this study. Essentially, positivism dominates in science and accepts that science quantitatively measures the autonomy of facts relating to a distinct perceived reality (Guba and Lincoln, 1994; Healy, M. and Perry, C, 2000; Saunders et al 2012). The preference associated to the positivist approach is the collection of data about "an observable reality and the search for regularities and causal relationships in your data to create law-like generalisations like those used by scientists" (Saunders et al, 2012).

Healy and Perry (2000) summarises positivism as follows:	
ELEMENT	**POSIVITISM:**
Ontology	Reality is real and capable of being understood
Epistemology	Objectivist: Findings are true
Common Methodology	Experiments/surveys: verification of hypotheses, chiefly quantitative methods

Healy and Perry (2000) notes that ontology "is reality, epistemology is the relationship between that reality and the researcher, and methodology is the technique used by the researcher to investigate that reality"; adapted from Perry et al. (1997, p. 547) based on Guba and Lincoln (1994).

Essentially then, the positivist philosophy in a nutshell concerns itself with "facts rather than impressions" (Saunders et al, 2012). This study adopts the positivist approach as the primary research philosophy and aligns itself to the fact that non-financial determinants in the decision to lease or buy can be quantified by means of a statistical tool and largely fit into this glove as per the above summary. The inclusion of non-financial determinants in the decision to lease or buy corporate real estate is by and large real and can be based on objectivity. The collection of data by means of surveys is the primary method of collecting data, whilst the validity of the

variables will be tested by means hypotheses testing from previous research. By applying the data to a statistical forecasting tool, this study will aid decision makers to change their current view and include non-financial determinants in the decision making process rather than excluding it, and avoid placing reliance solely on financial determinants.

3.3. Methodology

Healy and Perry (2000) define methodology as "the technique used by the researcher to investigate reality". Research design on the other hand is "a strategy for answering the questions or testing the hypotheses that stimulated the research in the first place (Pinsonneault and Kreamer, 1993).

The chosen research method for this study is quantitative, owing to the nature of the research question; the paradigm and the parameters that needs to be measured. A quantitative study involves both positivism and deductive logic. In contrast to the qualitative method, which involves constructivism and inductive logic, the deductive approach starts with theory which is mostly obtained from existing academic literature. A research strategy is then built to test the theory (Saunders et al, 2012).

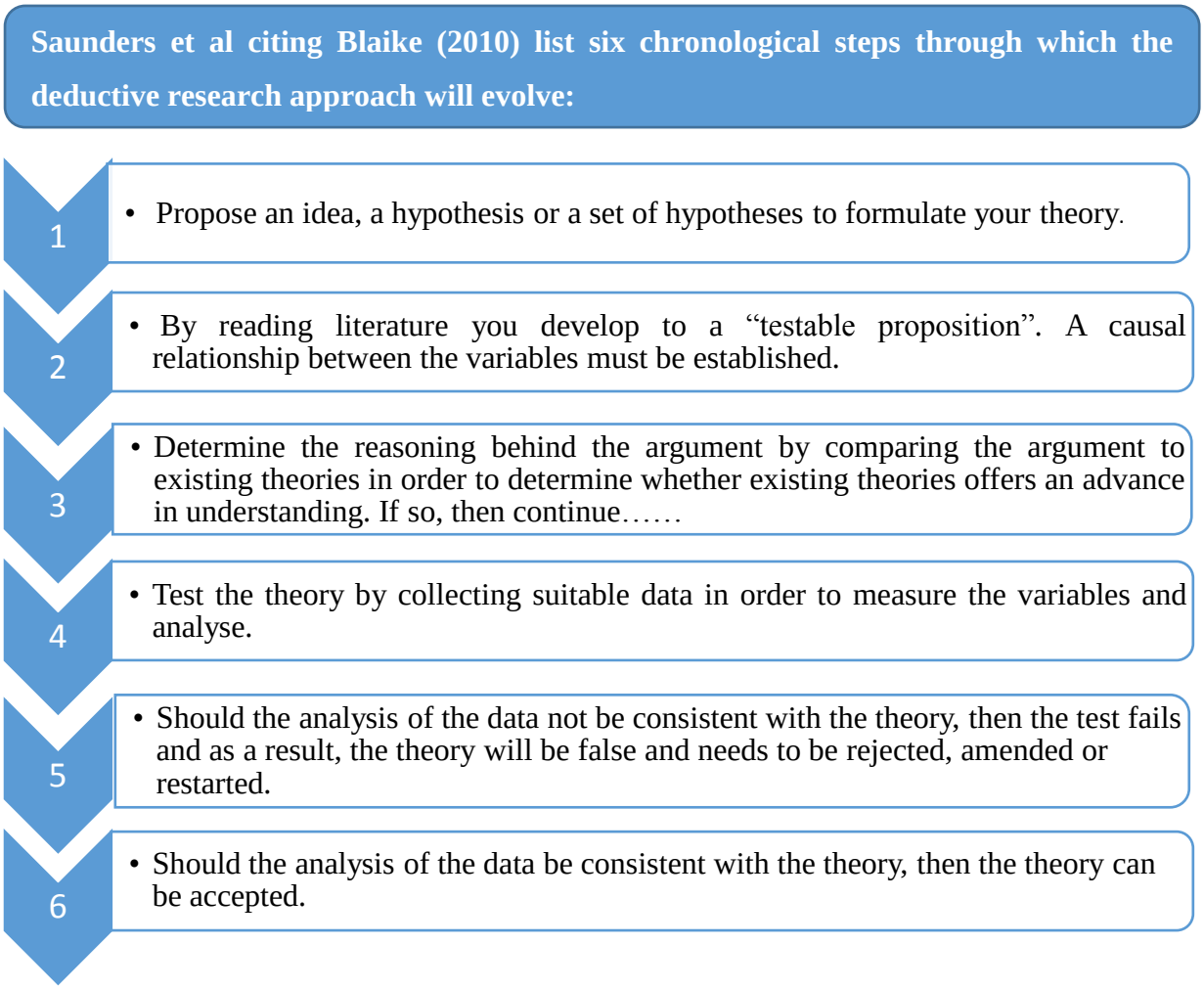


Figure 3. 1: The Deductive research approach

The approach to this study is based on the nature of the research question, as it does not assume a separate reality for the relationship between the variables (non-financial factors) and the phenomenon (lease versus buy decision). The approach allows this study to test numerous potential non-financial determinants based on a variety of company-specific and site-specific characteristics. Site-specific characteristics include the location, size, and physical features of the sites (Barkham and Park, 2011, p159). The company-specific characteristics include the size, sector, and leasing or ownership preference of the companies (Barkham and Park, 2011, p159).

3.4. Sampling

(Saunders et al, 2012) defines sampling as the process ' which will enable the researcher to reduce the amount of data needed by considering only data from a sub-group rather than all

possible cases or elements". A sampling plan enables this study to select the approach in order to select the sample i.e.: the selection of an adequate sample size; and the choice of media by which the survey is administered (Glasow, 2005).

Three main reasons exists for selecting a sample, as opposed to analysing the entire population: (1) it is not as time consuming; (2) it is less costly and (3) it is less of a burden and more practical to analyse (Berenson et al, 2012).

Key to the sampling choice is the selection of a sample frame that constitutes a listing of elements which is representative of a subset of the population. The sample frame must therefore adequately represent the unit of analysis and are drawn from "data sources such as population lists, directories or maps" (see Berenson et al, 2012; Pinsonneault and Kreamer, 1993).

3.4.1. Sample Selection

The sample selection should be representative of the population; it must be "systematic, purposive and random in selection" (Kreamer and Pinsonneault , 1993, p. 82). The sample selection depends on population size; its equality, the sample media; the degree of accuracy required and its associate costs. The respondents required must be selected at random and must have an equal chance of being selected (see Berenson et al, 2012; Pinsonneault and Kreamer, 1993; and Glasow, 2005). This is essentially the preferred method of sample selection.

3.4.2. Target Population

A population can be described as the "full set of cases from which a sample is taken" (Saunders et al, 2012) or consisting of "all the items or individuals about which you want to reach conclusions" whilst a sample can be defined as the "portion of the population that has been selected for analysis" (Berenson et al, 2012).

The following specifications describe the scope of the survey's target population:

1. The companies must occupy office real estate;

2. The companies must have a registered South African business address;

3. The companies must be located within the Johannesburg geographic metropolitan;

4. The companies must not be involved in the business of real estate.

It is unclear as to the total number of companies that meets this specific criteria. This study identified companies that met the necessary prerequisites by means of different internet sources and also by approaching property management companies, in order to facilitate the process.

3.4.3. Accessible Population

After analyses of the intended targeted population, this study looked at which companies, in the population, were accessible and willing to perform the study. The internet has made accessing different people in different parts of the world easier; the intention is therefore not to physically approach all of the companies but ensure a larger reachable population. I approached property management companies to see whether they were willing to disclose the physical/e-mail addresses of office occupiers under their management. All companies that met the selection criteria were sent emails with the consent form and the link to the online survey.

3.4.4. Sample Size

After determining the number of the companies that were accessible, only then was I in a position to select the sample size. As stated earlier, a sample can be defined as a "portion of the population that has been selected for analysis" (Berenson et al, 2012). The results of the sample enables the researcher to draw inferences about the characteristics of the entire population.

Sample size is key to this procedure; as the sample size increases, "the distribution of the mean become narrower and the variance decreases thereby reducing the overlap between the two distributions and increasing the statistical power (Glasow, 2005 citing Aron & Aron, 1997). A smaller sample size therefore produces inaccurate results as these are likely to be less reflective of the population characteristics. This study aims to achieve a large sample size in order to analyse the data and have a reasonable representation of the occupiers within the Johannesburg office population, given time constraints. Due to the choice of logistic regression, as the method of data analysis, the required sample size needs to be as large as possible and questionnaires to as many companies as possible. All the companies that fit the accessible population were sent e-mails with the appropriate consent form with a link to the online questionnaire.

3.4.5. Limitation of Sampling Method

There is however a limitation placed on simple random sampling in that it requires a complete list of the population for it to be functional and effective. A point to consider is that the list

must not only be complete, but must be current. A complete list is usually not available for large populations, in such cases it may be prudent to use alternate sampling methods.

3.5. Data collection

The primary means of collecting data for this study is by means of surveys. A survey is a way of "gathering information about the characteristics, actions or opinions of a large group of people, referred to as a population" (Kreamer and Pinsonneault, 1993, p. 77). Survey research is used: "to answer questions that have been raised; to solve problems that have been posed or observed; to assess needs and set goals; to determine whether or not specific objectives have been met; to establish baselines against which future comparisons can be made; to analyse trends across time, and generally, to describe what amount, and in what context" Glasow (2005). Buchanan and Hvizdak , (2009) is of the opinion that "the purpose of survey research include describing a population; identifying characteristics of a group; describing attributes and characteristics of research interest; explaining a phenomenon or explaining how variables are related. Survey data can be either quantitative in nature with numeric outcomes, or qualitative with detailed narrative outcomes".

Pinsonneault and Kreamer (1993) identified three characteristics of survey research: (1) Surveys are used to quantitatively define precise characteristics of a particular population and involves the analyses of the relationships between variables. (2) Data collected are from people by means of "structured or predefined questions" and (3) a sample of the population is used and collected in a specific way where inferences can therefore be drawn about the generalised population.

Surveys, according to Pinsonneault and Kreamer (1993), can however be fraught by five important weaknesses: "(1) single method design where mixed methods are needed, (2) unsystematic and often inadequate sampling procedures, (3) low response rates, (4) weak linkages between units of analysis and respondents, and (5) overreliance on cross-sectional surveys where longitudinal surveys are needed".

Surveys can therefore be broadly defined as a means of collecting data from a selected sample of the population where inferences can be drawn about the generalised population. Surveys can be inclusive in the types as well as the number of variables that can be researched. It has the advantage of reaching widely spread demographic and geographic recipients and require minimal costs to develop and administer (Glasow, 2005).

3.5.1. Unit of analysis

The unit for data collection in survey research are normally individuals and consequently responses were solicited from key individuals, whose primary responsibility it is to make decisions pertaining to the tenure of the corporation. There were instances where more than one individual was approached, within the same company, who operate at different levels of hierarchy with different "experiences and perceptions" who are nonetheless involved in decision making process (Glasow, 2005). Targeted individuals are corporate real estate executives, senior and middle management. Where the management of the corporate real estate is outsourced, the individual or company managing the decisions were approached in order to solicit a response.

Companies approached are occupiers of offices space within the Johannesburg Metropolitan and includes listed and unlisted entities, owner occupiers and occupiers leasing office space. Companies in the financial, insurance, business services, professional services, (e.g. architects, law firms), marketing, government, media and sales sectors were approached for responses.

3.6. The Questionnaire

3.6.1. Data Instrument

The primary instrument for data collection used in this study is by means of a questionnaire. A questionnaire can be described as a general method of collecting data where individuals are requested to respond to an identical set of questions in a prearranged order (Saunders et al, 2012). Questionnaires are commonly used and requires minimum resources as it saves on costs, time and money and best suited to solicit confidential information (Glasow, 2005), which has the ability to reach a large number of the population when compared to other methods of data collection.

The data received from the questionnaire should be well designed and simple to analyse and should "enable you to examine and explain causal relationships between variables" (Saunders et al, 2012).

The face validity of the data collection instrument (questionnaire) is an important consideration and is deliberated on from the inception. Glasow, (2005) defines face validity as the degree to which the "measurements of the survey provides the information needed to meet the study's purpose". So effectively the instrument should look like it measures what it was planned to measure. To ensure validity of the data collection instrument, the questionnaire is based on and

referenced against variables as per the study undertaken by Barkham and Park, (2011). Reliance in this study is based on this pretested questionnaire undertaken by Barkham and Park, (2011) and modifying the questionnaire slightly with the inclusion of physical attributes of offices as opposed to Barkham and Park's research which focusses on to the physical attributes of industrial space.

The necessary safeguard taken to increase face validity is to ensure that the questions are analysed and formulated appropriately in order for it to be clear and understood by our participants. Experts in the field were approached, by means of interviews, in order to determine the face validity pertaining to the physical characteristics associated to that of office space when the decision to lease of buy is made. Assumptions, ambiguity and hypothetical scenarios are avoided as far as possible in order for the responses to be a true reflection of the current behaviours in the market place.

Closed ended online questionnaires were used in this study as a research instrument and directed towards respondents who are responsible for making the decision to lease or own their corporate office real estate within Johannesburg.

This study makes use of the Likert scale (ordinal scale) to determine the degree of consensus or dissention when the lease decision to lease or buy is made. This method entails measuring a "value of dispersion that is both logically and theoretically sound" (Tasle and Wierman, 2007). Ordinal data are "ordered categories and used typically in all languages to convey a sense of approximate ordering" where the categories are values (Tasle and Wierman, 2007). A Likert scale is a one-dimensional method of scaling where concepts are easier to comprehend when expressed in a single dimension and allows the respondent to rate a question and indicate whether he/she strongly agrees or disagrees with the question (see Saunders et al, 2012 and Tasle and Wierman, 2007). The data collected often involves determining attitudinal behaviours or feelings aligned to some form of attribute, as in the case of this study, where the outcome using a logistic regression model is aligned to the decision to lease or own corporate real estate. The scale is generally articulated as a statement with sets of choices, ranging from strongly agree to strongly disagree. The respondent makes a choice usually by examining the category and marking it in a bubble on the predetermined options. The respondent has to make a choice and it must consist of only one choice (Tasle and Wierman, 2007).

3.6.2. Issues addressed by the questionnaire

The primary purpose of the questionnaire is to address matters pertaining to ownership and tenure as well as issues around characteristics of individual companies and sites. There are three parts to the questionnaire.

(1) General company identification characteristics, such as the business geographic location, scope of key business activities, physical building and site attributes, source of real estate management services, size, as well as form of tenure.

(2) Using the Likert scale rates the comparative importance and significance of company characteristics, locational and physical features of the office real estate is determined. A scale of 0 to 4 is used, with 0 being that the characteristic is not applicable to the company, 1 being the least important and 4 as most important.

(3) The company's choice of tenure i.e. to lease or own its office corporate real estate.

The questionnaire comprise fifteen questions. Nine of these are based on the demographics of the companies and sites, for example, companies are merely asked to disclose the number of employees based on the given categories. The questionnaire also contains survey questions pertaining to tenure choice, which provides the necessary data for this study to determine and test empirically the number of probable non-financial determinants, based on a range of site-specific target population and company-specific characteristics. Site-specific characteristics include the location, size, and physical attributes of the sites. The company-specific characteristics include the size, sector, and ownership preference of the companies.

3.6.3. Questionnaire Distribution

The persons responsible for making the decision to lease or buy their corporate real estate varies from company to company and is made at different organisational levels ranging from middle to senior management. It is therefore critical that contact is established with the right people, within the organisation, in order to obtain credible and relevant data required for this study. Once the list of possible companies is drawn up and sampling has taken place, an e-mail/call was sent or placed to the receptionists or secretaries in order to be referred to the relevant party in the firm. The aim was to contact the relevant person/s, brief him/her on the requirements and purpose of the survey. Thereafter the questionnaire was distributed with the online link to the relevant parties.

The primary method for collecting data was by means of an online survey via an e-mail as postal and individual hand to hand delivery methods have become somewhat dated. The latter was however left open as an option, depending on the level of responses. Internet surveys allow researchers to produce and distribute surveys in a convenient and prompt manner, which enables researchers to have sight of the data and the number of respondents in a convenient and ordered fashion. These have now been widely accepted as a sound away of collecting data (Buchanan, E. and Hvizdak E, 2009).

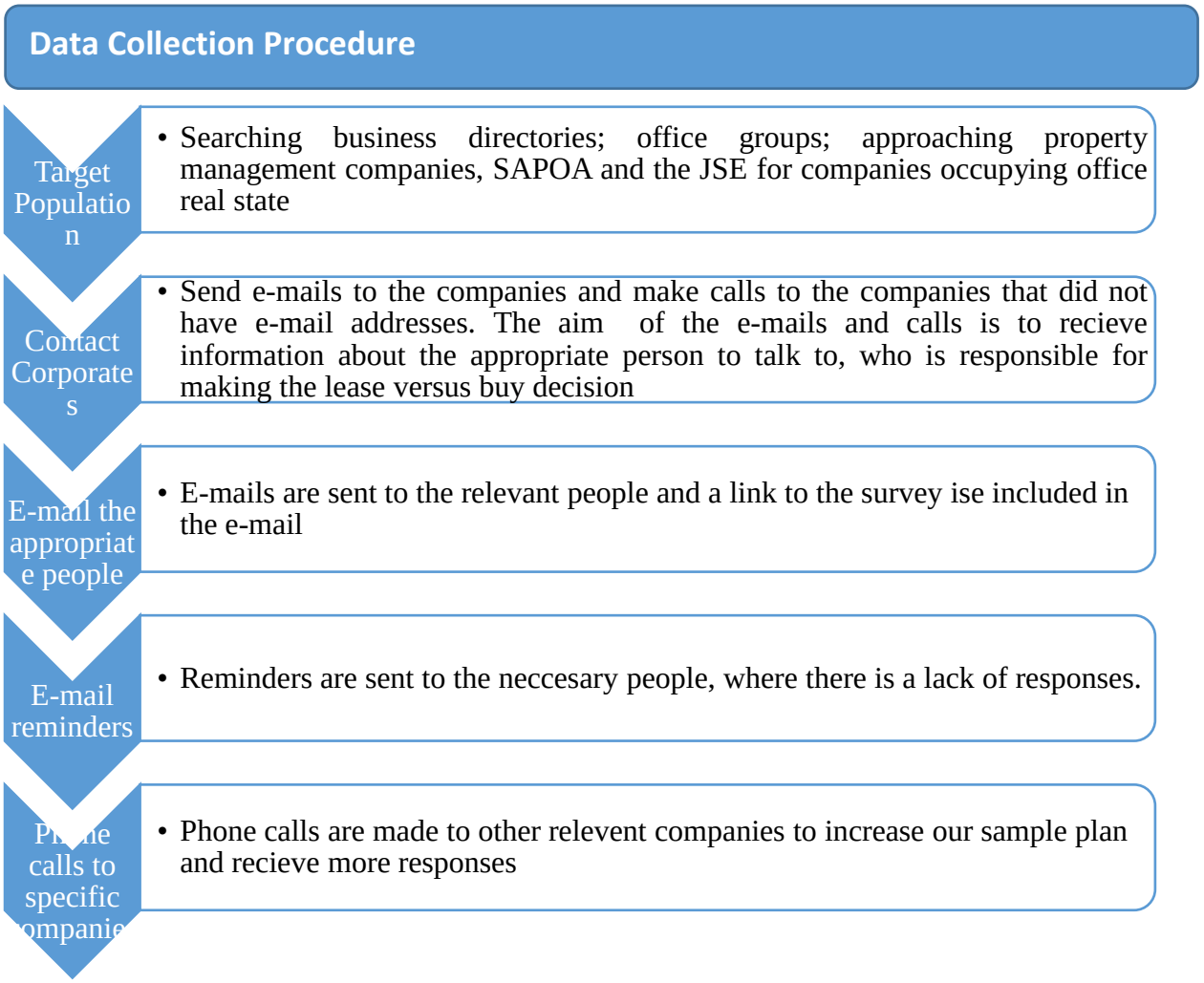


Figure 3.2: Data collection procedure (**Saunders et al, 2012)**

The questionnaire was accompanied by a covering letter, which includes the purpose of the study; the approval for the study; the role of the respondent and an express guarantee of anonymity.

3.6.4. Response rates and dealing with non-responses

With internet based questionnaires responses are generally low and as a result it could be very challenging to get a representative sample to draw inferences from, regarding the population's behaviour (Saunders et al, 2012). This is particularly troublesome for descriptive statistics as reliance is placed on a representative sample in order to determine behavioural characteristics of the population with high degree of confidence (see Saunders et al, 2012 and Pinsonneault and Kreamer, 1993). In order to improve response rates Pinsonneault and Kreamer (1993) recommends that the entry point into a company "should be as high in the hierarchy as possible". They also suggest affiliations to recognised professional bodies and that placing their

logos on the questionnaire may improve participation and response rates. Further to this they stress that the questionnaire should be as short as possible and should be followed up by personalised follow up letters. This study follows this recommended approach. As stated, the aim is to foster a relationship with SAPOA and for them to endorse the research at hand.

3.6.5. Limitation of Data Collection Instrument

Questionnaires pertaining to quantitative research is sometimes inadequate in understanding some forms of data e.g. emotional changes, conduct, feelings etc., which may lack validity to a certain extent. There is no way of confirming how honest respondents are in answering the questions. People may construe questions differently and answer questions based on their own subjective understanding thereof, instead of the intended purpose as set out by the researcher. There is an amount of researcher imposition, in that, when drafting the questionnaire, every decision and assumption made by the researcher is subjective, as to what is and what is not significant and may therefore be missing something that is of significance.

3.7. Data Analysis

3.7.1. Instrument

There are a lot of important research topics for which the dependant variables are limited i.e. the dependant variables classifies an observation into different classes. The dependent variable must be mutually exclusive and exhaustive and must have two categories, which in our case would be the decision to lease or own. For example, whether a company should lease or buy their office space, whether they manage their properties in-house etc. For these types of variables, the outcome is not continuous nor is it normally distributed. Unlike OLS regression, a logistic regression does not require for the variables to be normally distributed, nor does it assume a linear relationship between the independent and the dependent variables (Chao-Ying et al, 2002).

A binary logistic regression is a type of regression analysis used to explore and test data where the dependant variable is binary. The model is a probabilistic statistical model where the response is binary and can either be true (success) or false (failure) and is coded as 1 or 0. The regression applies the most extreme probability estimation in the wake of changing the dependent variable into a logit variable (Chao-Ying et al, 2002). A logistic regression further provides information about the relationships and strengths between the variables, for example, predicting whether a value adding site characteristic would improve the odds of ownership.

Due to the nature of the questionnaire all the questions and answers are binary in nature, with closed responses to the questions. For example, companies are merely asked to check the number of employees the company employs based on the given category. In terms of their characteristics pertaining to location of their sites, the companies are merely asked to check the geographic location. The data is then explored and analysed in order to determine and find insights into the corporate real estate's tenure and produce evidence on the significance and impact the role that non-financial determinants play in the lease versus buy decision.

3.7.2. Assumptions

1. The dependant (lease or buy) variable is discrete and not continuous. The dependant variable should have two categories.
2. It assumes a linear relationship of the independent variables and the logit transformations of the dependant variable.
3. It assumes that the responses of different observations are independent of one another.
4. The independent variables in a logistic regression can take any form, although in our case all the variables are binary.

   (Chao-Ying et al, 2002)

3.7.3. The logistic regression model

The logistic regression model is stated in terms of the probability that y=1 which is referred to as $\hat{p}$.

logit(y) = natural log(odds) = $\ln(\frac{\hat{p}}{1-\hat{p}}) = \beta_0 + \beta_1 x_i$ Equation: 1

Where In is the natural logarithm, p is the probability of the outcome of interest such as the lease or buy; β0 is the Y intercept; β1 is the regression coefficient; X is the predictor variable(s).

Given the regression equation, the expected probability that y=1 for a given value of X can be calculated using the following equation:

$$\hat{p} = \frac{exp(\beta_0+\beta_1 x_i)}{1+\exp(\beta_0+\beta_1 x_i)} = \frac{e^{\beta_0+\beta_1 x_i}}{1+ e^{\beta_0+\beta_1 x_i}}$$ Equation: 2

Where exp is the exponent function. From equation 1, the relationship between logit(y) and x is linear but from equation 2, the relationship is nonlinear. Due to this, the natural logarithm

transformation of the odds in equation 1 is important to make the relationship between the categorical outcome (Y) and its predictors linear (Chao-Ying et al, 2002).

β0, β1 are mostly estimated using the maximum likelihood method, which maximises the chances of grouping the observed data into the suitable category given the regression coefficients (Chao-Ying et al, 2002).

3.7.4. The Kruskal-Wallis Test

A Kruskal Wallis test was also performed to determine whether there were statistically significant differences between the company's main operations; the different positions in the company; whether a company has a corporate reals estate department or not and whether a company has an in-house or outsourced real estate function in relation the physical and locational attributes.

The Kruskal-Wallis test is a rank-based nonparametric test that can be used to determine if there are statistically significant differences between two or more groups of an independent variable on a continuous or ordinal dependent variable. It is considered the nonparametric alternative to the one way ANOVA. (Statistics Solutions, Advancement Through Clarity.)

The Kruskal-Wallis H test cannot tell you which specific groups of the independent variables are statistically significantly different from each other; it only tells whether at least two groups were different. A post hoc test is used to determine which of the groups differ from each other.

3.7.4.1. Assumptions

When you choose to analyse your data using a Kruskal-Wallis H test, part of the process involves checking to make sure that the data you want to analyse can actually be analysed using a Kruskal-Wallis test.

1. The dependent variable should be ordinal or continuous variable.
2. The independent variable should consist of two or more categories.
3. The observations should be independent.
4. Does not assume a normal distribution. (Statistics Solutions, Advancement Through Clarity.)

3.8. Ethical considerations when doing a survey

Upholding high ethical standards is immensely important, in research, as it improves on the quality of the data collected, safeguards both participants and researchers and guarantees that future researchers will have access to respondents within the research community (Broom, 2006). Broom defines research ethics as "moral problems encountered in connection with scientific or other academic research by the researcher, their subjects or their social environment" whilst Abed (2015) describes it as "moral principles, guiding conduct, which are held by a group or even a profession". Albeit that the intentions of researchers are well founded, the possibility may exist that engaging with potential respondents could mistakenly end up harming them unintentionally. Therefore in order for the research to be ethical it is key critical that the dignity, rights and wellbeing of all respondents are of prime concern. Ethics should also not only be a consideration at the commencement of the research but throughout the lifecycle of the research (Abed, 2015).

Main ethical considerations with specific reference to this study includes; integrity and quality of data reported on; fully informing the respondents as to the purpose of the study; confidentiality of the information supplied; anonymity of the respondents are respected; voluntary participation; and that harm/deceit of respondents is avoided (See Fouka and, Marianna Mantzoro; Abed and Broom).

3.8.1. Informed Consent

Informed consent is one of the major ethical considerations that needs to be taken into account when undertaking research. Fouka and Mantzoruo (2011) citing Armiger defines informed consent as "where a person knowingly, voluntarily and intelligently, and in a clear and manifest way, gives his consent" without undue influence. There are various elements that needs to be present in the process of gaining consent from respondents, which includes amongst others (1) a layman's description for the research; (2) the chance to ask questions; (3) the opportunity to request from others advice pertaining to participation; (4) a description of the respondents rights at any point of the research; (5) a description of the research should be given with the contact details of the research supervisor (Broom, 2006).

To ensure voluntary participation by the participants involved, a consent form and information sheet must accompany the questionnaire, which contains the following information:

- Purpose and reason for doing the research

- Who we are and where we are from accompanied by our contact details
- Supervisor and contact details
- Protection of confidentiality and anonymity
- How participants were selected
- What is required from participants and approximate time required to complete the response
- Potential harm
- What will happen to the data and the report and how it will be stored

Broom (2006) undertaking a study on social research recommends that the following questions should be used in a typical consent form:

1. I have read the information sheet for the named study. **2.** I have had the opportunity to ask questions about the study. **3.** I understand the purpose of the study, and how I will be involved. **4.** I understand, and accept, that if I take part in the study I may not gain any direct, personal benefit from it. **5.** I understand that all information collected in the study will be held in confidence and that, if it is presented or published, all my personal details will be removed. **6.** I confirm that I will be taking part in this study of my own free will, and I understand that I may withdraw from it, at any time and for any reason, without my medical care or my legal rights being affected.

Table 3.1: Questions used in consent form, Broom (2006)

3.8.2. Confidentiality and Anonymity of the Participants

Anonymity safeguards confidentiality and is regarded as one of the most important ethical considerations when undertaking research (Abed, 2015). The anonymity of the respondents are secured when the identity of the respondents cannot be traced to their personal responses. When the anonymity cannot be guaranteed the researcher will have to address the issue of confidentiality, which entails the management of such data to guarantee that the respondents' identity is protected and ensure that the data will not be accessed by others. (Fouka and Mantzoruo, 2011 and Broom, 2006). Your research document should then state how the data will be stored (Broom, 2006).

Majority of surveys are completed anonymously thereby ensuring confidentiality. This study is no different, as all the questionnaires are completed anonymously to ensure confidentiality

of the respondents. The questions are structured in such a way that it will be unable to disclose the identity of the respondents. This study followed the process whereby which a Wits account was created to ensure anonymity and confidentiality. However there is no absolute guarantee given that the internet is subject to risk of intrusion by hackers. Buchanan, E. and Hvizdak E, (2009) recommends that any study should provide a platform for participants to ask questions online before consenting to participate in the study, which is a tool that this study employs.

3.8.3. Harm/Maleficence

Most questionnaires concern issues that are sensitive which may potentially cause physical, mental harm or discomfort to respondents (Fouka and Mantzoruo, 2011). Since the nature of this research are quantitative in nature and not personal, it is my opinion that the participants were not subject to any emotional or physical harm.

3.8.4. Right to privacy

In a study done by Fouka and Mantzorou (2011) citing Levine (1976), privacy can be described as "the freedom an individual has to determine the time, extent, and general circumstances under which private information will be shared with or withheld from others." Breach of privacy occurs when personal information such as "beliefs, attitudes, opinions and records are shared with others" without their consent Fouka and Mantzorou (2011). It is under this premise that respondents to our questionnaire were in a position to reserve the right to withdraw from or not answer the questionnaire and choose the time and place for answering the questionnaires or undertaking interviews.

3.8.5. Deceit and reporting to true data

Deceit is to be avoided at all times. The research is conducted with honesty and all the respondents are well informed about the factual purpose of this study and were given the right to have their information withdrawn. The results are also analysed to represent the true nature of the data collected and consequently there is no deliberate intent to misrepresent the results. Key to this ethical principle is to ensure that the responses of the respondents are represented accurately without bias and that the limitations and shortcomings of the data collected are highlighted in the study (Broom, 2006).

Chapter 4

Results and Discussion

This Paper is considered relevant as no such research has been done in this arena for offices as an asset class. No previous literature exists for the topic under discussion bar from the study undertaken by Barkham, which is extensively covered in the report. No comparisons could be made between the results of the two studies as these cover different asset classes with different market dynamics. Due to the limited responses, no clear findings can be reported on as the model is not robust enough to draw credible conclusions and therefore this study does not provide a solid foundation for making a convincing and well-informed connection and is not considered comparable to previous studies. The following represents an analysis of the results as sourced from the market by means of a questionnaire.

4.1 Data

Approximately 180 e-mails where sent to various companies occupying office corporate real estate within the Johannesburg Metropole. Various follow up e-mails were sent followed by phone calls. There were a total of 13 responses representing a response rate of 7.22%. Of this sample, 38.5% of the companies indicated lease occupation whilst 61.5% indicated a combination of lease and own occupation. Of the 13 responses, 9 were located in the Sandton precinct which is the financial hub of South Africa. Also 9 of the responses have complements of more than a 1 000 employees with all of these companies having an annual turnover of more than a R1 000 000 000, which indicates that the profile of the majority of the respondents are quite high.

Section 1

4.2 Respondent Characteristics

Nature of respondent company's main operations.

There were a total of 13 companies in this study. From this number, 1 of them was involved in sales; 4 were involved in financial services; 3 were involved in professional services and 5 of the companies were involved in other services.

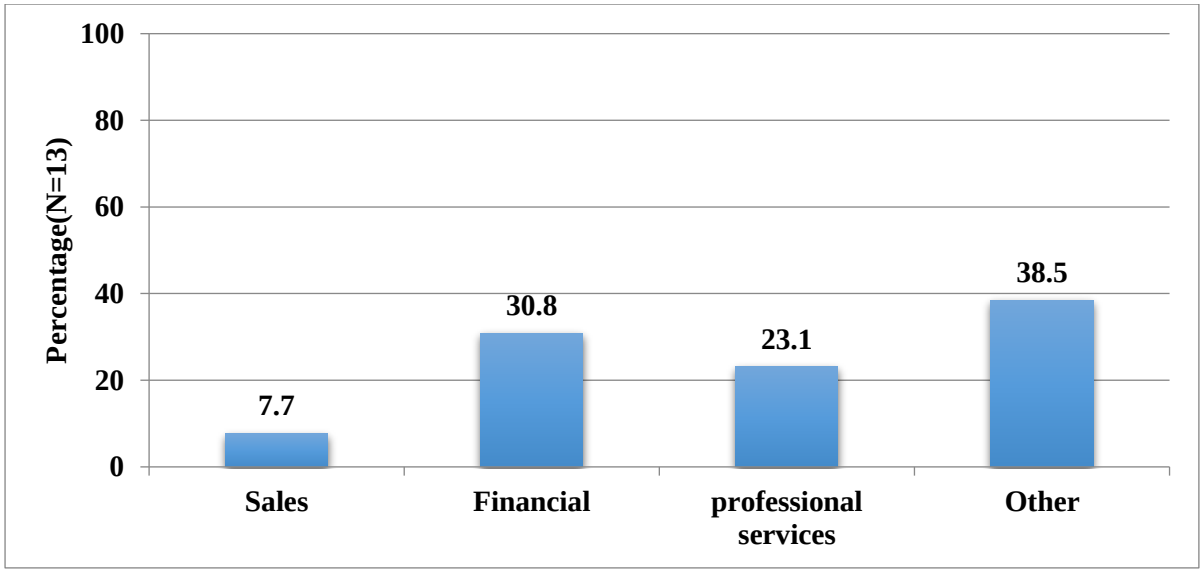


Figure 4.1: Company's main operations

The bar graph shows the distribution of the company's main operations. It shows that most of the company's main operations (Other) were not captured in the questionnaire whilst the second highest operation is that of financial services.

Position in the company.

A total number of 11 participants in the survey were occupying senior management positions whilst 2 respondents occupy other positions.

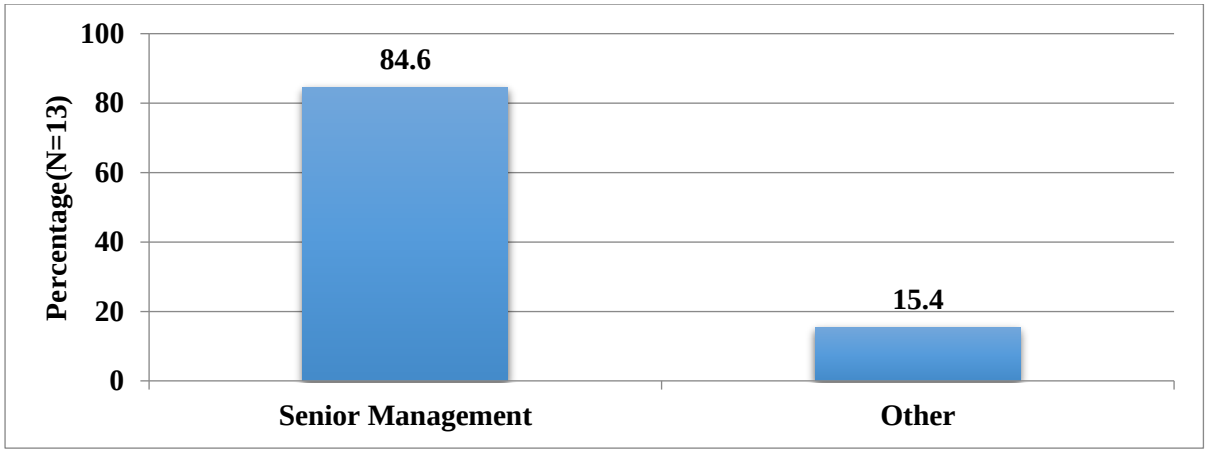


Figure 4.2: Position in company

The bar graph in figure 4.2 shows the distribution of participants with their positions in the company. The graph shows that most of the participants occupy senior management positions.

Presence of corporate real estate department.

There were 12 respondents whose companies had a corporate real estate department, whilst 1 did not have a corporate real estate department.

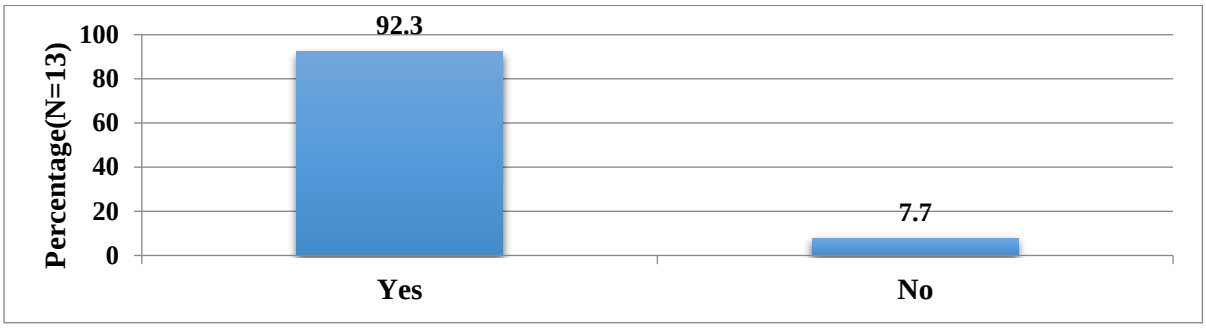


Figure 4.3: Presence of corporate real estate department

The bar graph in Figure 4.3 shows that most of the companies had corporate real estate departments.

Job title of the corporate real estate individual.

From a total of 13 participants, there were 4 participants, in the study, who were executive heads of corporate real estate; 4 were heads of corporate real estate; 1 was the head of facilities and 4 of the participants had other job titles.

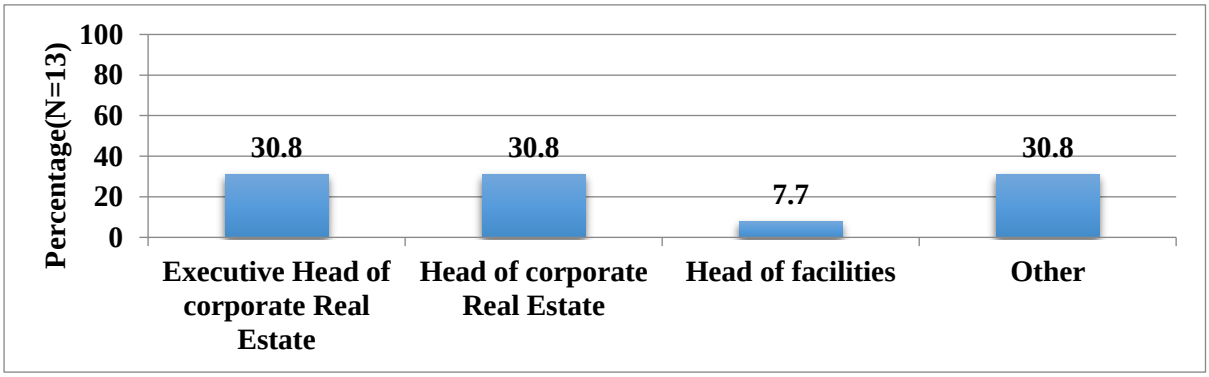


Figure 4.4: Job title of company's corporate real estate individual

The graph in figure 4.4 represents job titles of participants. From the graph, it is evident that executive head of corporate real estate, head of corporate real estate and other job titles occupies the highest number of job titles.

Functions of the corporate real estate unit.

From a total of 13 participants, there were 4 participants in the study whose companies perform real estate finance; 8 of the companies undertake property development; 7 of them undertake real estate acquisition; 7 companies are into real estate disposals; property management is performed by 10 companies; 8 of the companies are into facilities management; whilst 3 companies perform other functions.

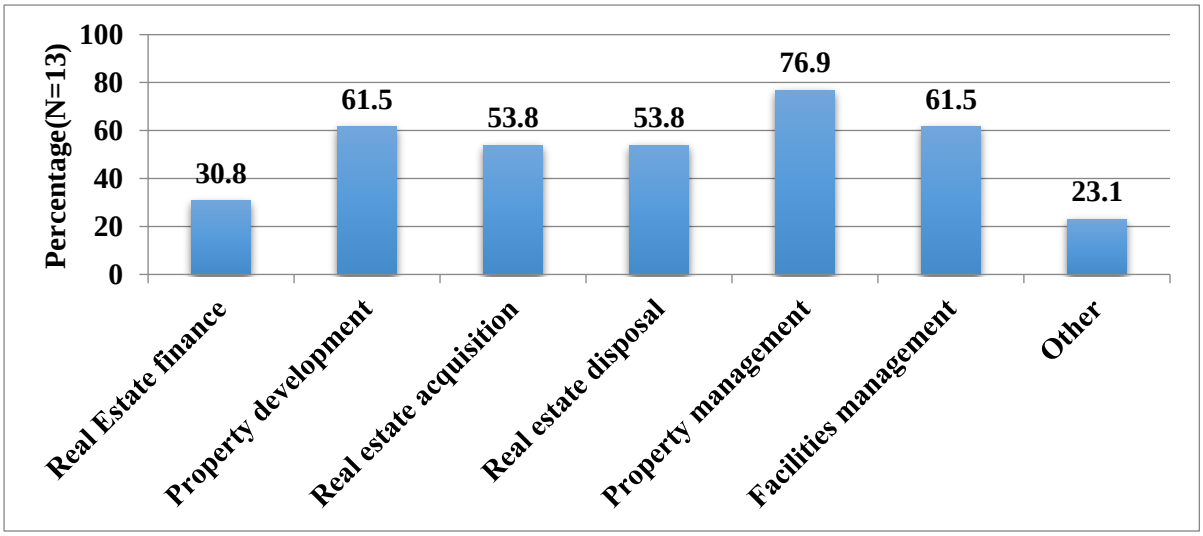


Figure 4.5: Functions of the company's corporate real estate unit

The graph in figure 4.5 represents the functions performed by the company's corporate real estate unit. From the graph, it is evident that most of the companies undertake property management.

In-house/outsource of corporate real estate function.

Out of the 13 companies in the study; 10 companies had an in-house corporate real estate function; 1 company outsource their corporate real estate function; whilst 2 of the companies partly outsource their real estate function.

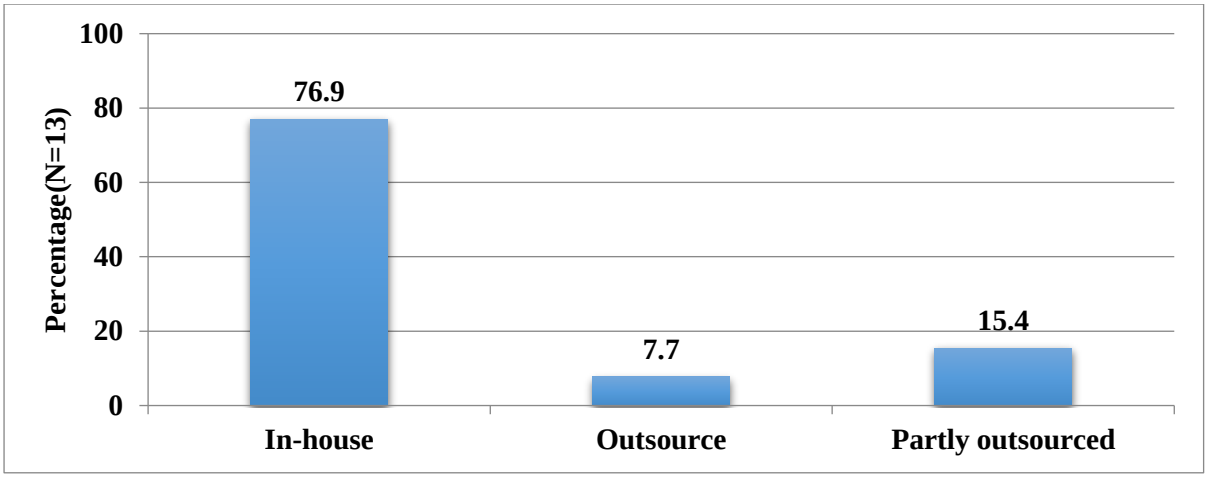


Figure 4.6: In-house vs outsource of CRE

The graph in figure 4.6 represents the number of companies with either an in-house or outsource function. From the graph, it is evident that majority of the companies had an in-house corporate real estate function whilst a very small number of companies outsource their corporate real estate function.

When partly outsourced, the table below demonstrates functions that are outsourced and functions undertaken in-house.

From the two companies that partly outsource their functions, one undertakes real estate finance themselves, both companies outsource property development, real estate acquisition and real estate disposal. Both companies undertake property management and facilities management in-house.

	In-house	Outsourced
Real estate finance	1	
Property development		2
Real estate acquisition		2
Real estate disposal		2
Property management	2	
Facilities management	2	

Table 4.1: Office locations

Location of offices.

Out of 13 companies in this study, 1 had their offices located in Johannesburg CBD/ Parktown and surrounds; 1 company had their offices located in Melrose Arch /Waverley; 9 companies had their offices located in Sandton CBD and immediate surroundings; whilst 2 companies had their offices located in other suburbs.

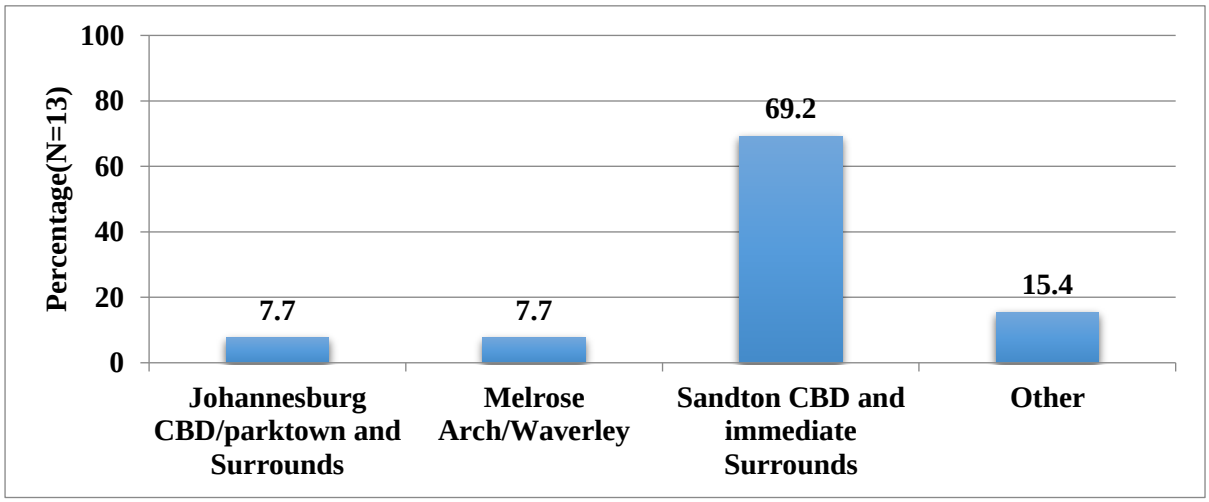


Figure 4.7: Location of company

The graph in figure 4.7 represents the locations of the companies in the study. From the graph, it is evident that majority of the companies have their offices located in Sandton, whilst a small portion of the companies have their offices located in Johannesburg and Melrose Arch.

Number of employees on site.

Of the 13 companies in the study, 5 companies have less than 100 employees on their site; 2 of the companies have between 101 and 500 employees on their site; 1 company has between 501 and 1000 employees; 2 companies have 1001 and 5000 employees on their site; whilst 3

of the companies have more than 5000 employees on their site.

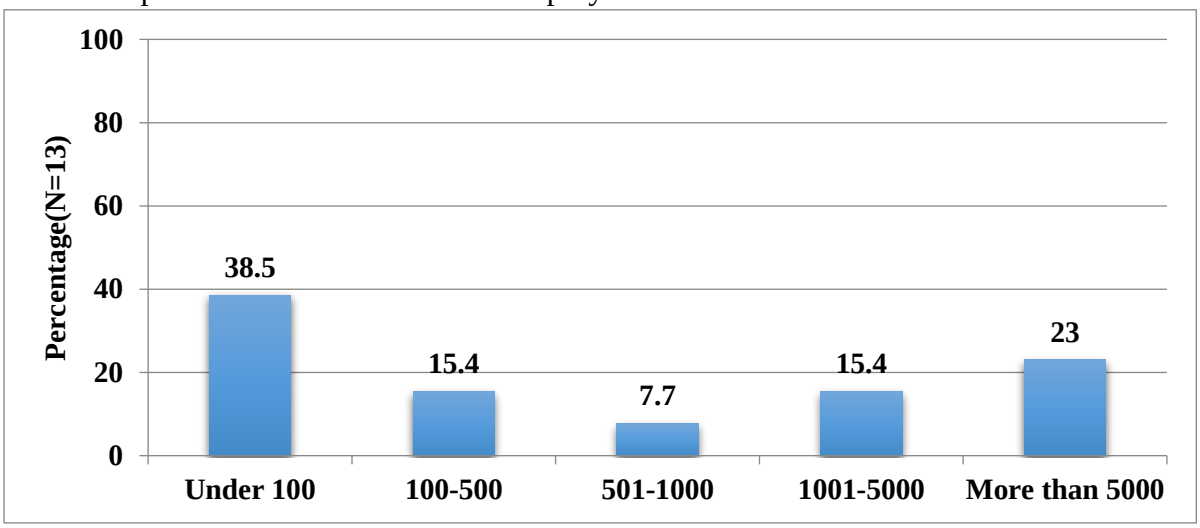


Figure 4.8: Number of employees on site

The graph in figure 4.8 represents the number of employees on the company site. From the graph, it is evident that majority of the companies employ less than 100 employees on site whilst a smaller number of companies employ between 501 to 1 000 employees on their site.

Company size (number of employees).

From the total of the 13 number of companies in the study; 4 companies employ less than 100 employees, 1 company employ between 100 and 500 employees; 1 company has between 1001 and 2500 employees; 1 company has 2 501 and 5 000 employees; 1 company has between 5 001 and 10 000 employees; whilst 5 of the companies employ more than 10 000 employees.

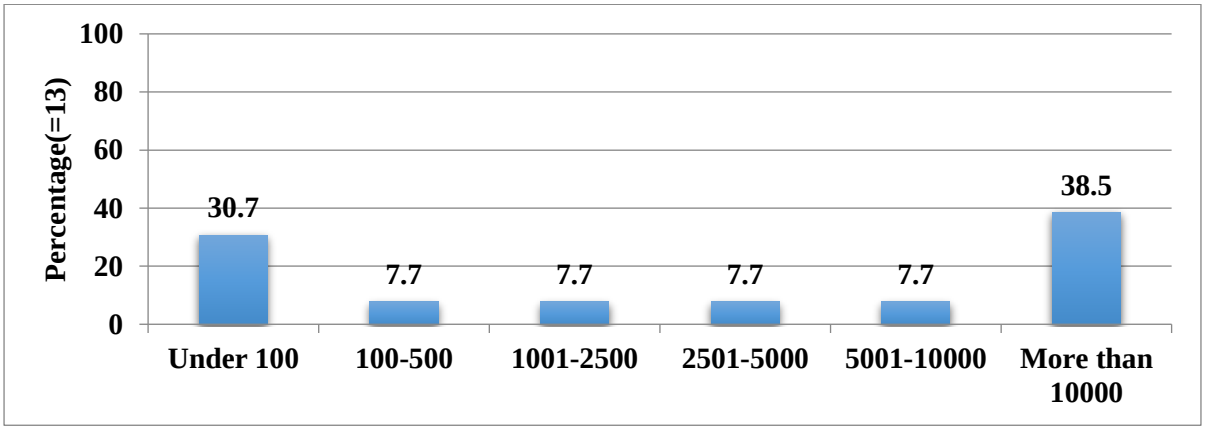


Figure 4.9: Number of employees employed by company

The graph in figure 4.9 represents the number of employees which are employed by the companies. From the graph, it is evident that majority of the companies employ more than 10 000 employees.

Annual turnover.

The annual turnover of the companies are spread as follows: 1 company has a turnover of between R5 000 000 and R40 000 000; 2 of the companies have an annual turnover of R40 000 001 and R250 000 000; whilst 9 companies have an annual turnover of more than R1 000 000 000.

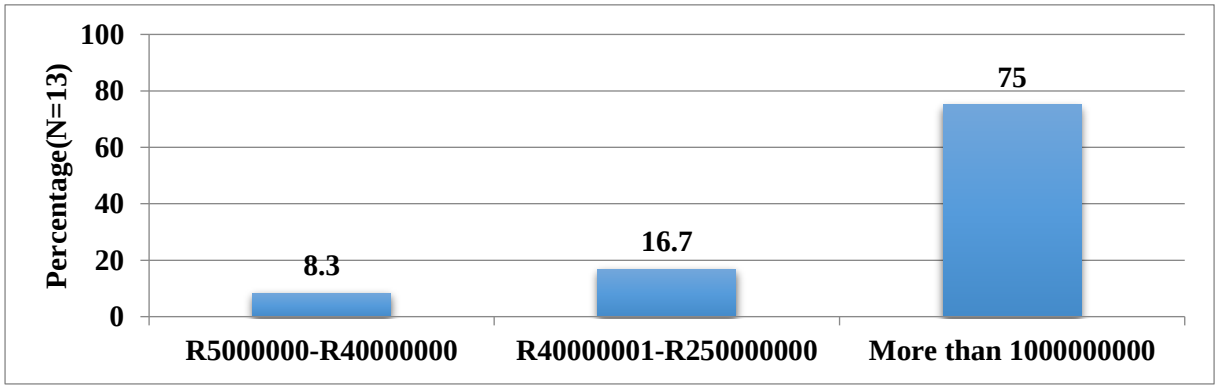


Figure 4.10: Annual turnover of company

From the graph, it is evident that majority of the companies have an annual turnover more than R1 000 000 000.

Section 2:

4.3 Leasing versus owning

There are 5 companies from the total number of 13 that lease their corporate real estate representing 38.5%; whilst 8 of the companies have a combination of owning and leasing their corporate real estate, which represents 61.5% of the total sample in the study.

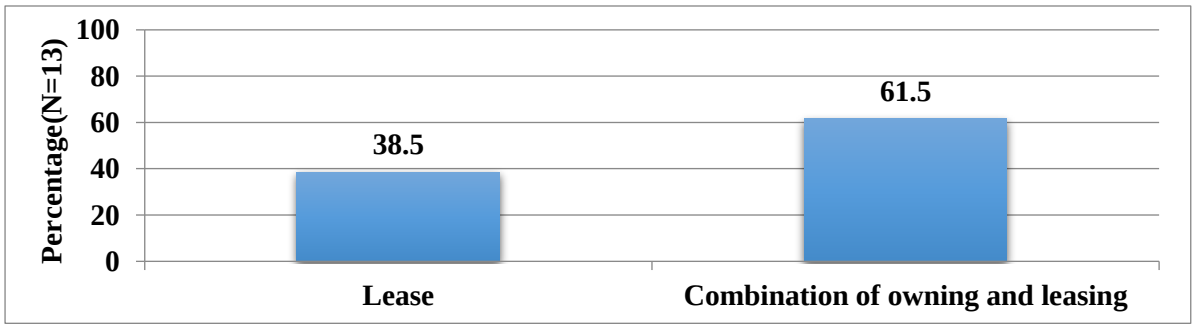


Figure 4.11: Lease or own status

Figure 14.11: Bar graph of the type of ownership of the company's real estate. The bar graph indicates that most of the companies have a combination of owning and leasing the company's corporate real estate.

Ratings of the significance of the locational attributes.

	Not applicable	Not important	Fairly important	Important	Very important
Visibility of site of location	0	1	4	1	7
Prestigious location of site	1	0	2	4	5
Proximity to key clients	2	1	2	3	5
Access to airport, public transportation and freeway	0	3	3	2	5
Business support services(shopping, banks, restaurants)	1	2	4	4	2
Proximity to skilled labour	3	2	3	3	2
Proximity to general labour	4	2	4	2	1
Proximity to suppliers	4	6	0	1	2
Proximity to high quality residential neighbourhoods	3	8	1	1	0

Table 4.2: Locational attributes

Out of the total of 13 respondents, 1 argued that prestigious location of site is not applicable; 2 participants indicated it is fairly important; 4 respondents indicated that it is important whilst 5 indicated that prestigious location of site is very important when deciding to lease or own corporate real estate.

There are 2 participants who indicated that proximity to key clients is not applicable to them; 1 indicated that it is not important to be close to key clients; 2 indicated it is fairly important; 3 indicated that it is important whilst 5 of the respondents believed that proximity to key clients is a factor to be considered when making a decision to lease or own their corporate real estate.

From the total respondents, 4 indicated that proximity to suppliers is not applicable to them; 6 of the respondents believed that proximity to suppliers is not important; 1 respondent indicated that it is important, whilst 2 believed that close proximity to their suppliers is very important when the decision is made to lease or own their corporate real estate.

A total of 4 respondents indicated that proximity to general labour is not applicable to them; 2 believed that proximity to general labour is not important; 4 indicated that it is fairly important; 2 indicated it is important whilst 1 indicated that close proximity to general labour is very important when the decision is made to lease or own their corporate real estate.

From the total respondents, 3 indicated that proximity to skilled labour is not applicable to them; 2 of the respondents believed that proximity to skilled labour is not important; 3 of the respondents indicated that it is fairly important; 3 believed that it is important whilst 2 believed that close proximity to skilled labour is very important when the decision is made to lease or own their corporate real estate.

A total of 3 respondents indicated that access to the airport, public transportation and freeway is not important; 3 indicated that it is fairly important; 2 indicated it is important whilst 5 indicated that access to airport and public transportation is very important when a company decides to lease or own their corporate real estate.

1 respondent indicated that visibility of the site location is not important; 4 indicated that it is fairly important; 1 indicated it is important whilst 7 indicated that visibility of the site location is very important when a company decides to lease or own their corporate real estate. Generally 53.8% of the respondents strongly agree that visibility of the site location is very important.

From the total respondents, 1 indicated that business support services is not applicable; 2 of the respondents believed that it is not important; 4 indicated that it is fairly important; 4 indicated that it is important whilst 2 of the respondents believed that business support services is very important when a company decides to lease or own their corporate real estate.

3 respondents indicated that proximity to high quality residential neighbourhoods is not applicable; 8 of the respondents indicated that it is not important to be near high quality residential neighbourhoods; 1 respondent believe that it is fairly important whilst 1 respondent indicated that proximity to high residential neighbourhoods is very important when a company decides to lease or own their corporate real estate.

Ratings of the significance of the physical attributes

	Not applicable	Not important	Fairly important	Important	Very important
Space layout	0	0	0	3	10
Security	0	0	0	4	9
User recognisability	0	0	0	5	8
Adequate car parking	0	0	1	3	9
Flexibility of use of space	1	0	0	3	9
Ensuring space for future expansion	1	0	1	3	8
Exterior appearance of building	0	1	3	6	3
Grade of offices	1	0	2	5	5
Site being multi-tenanted	4	4	1	2	2

Table 4.3: Physical attributes

Out of the total of 13 respondents, 4 argued that the site being multi-tenanted is not applicable to them; 4 participants indicated that it is not important; 1 indicated it is fairly important; 2 respondents indicated that it is important whilst 2 indicated that site being multi-tenanted is very important when deciding to lease or own corporate real estate.

There is 1 participant who indicated that adequate car parking is fairly important; 3 indicated that it is important whilst 9 of the respondents believed that adequate car parking is very important when making a decision to lease or own a real estate. Generally, 69.2% of the respondents strongly agree that adequate parking is very important.

From the total respondents, 1 indicated that exterior appearance of a building is not important; 3 believed that it is fairly important; 6 of the respondents indicated that it is important whilst 3 respondents believed that exterior appearance of a building is very important when a company wants to lease or own real estate.

A total of 5 respondents indicated that user recognisability is important whilst 8 indicated that user recognisability is very important when a company decides to lease or own their corporate real estate. Generally, 61.5% of the respondents strongly agree that user recognisability is very important.

A total of 3 respondents indicated that space layout is important whilst 10 indicated that space layout is very important when a company decides to lease or own their corporate real estate. Generally, 76.9% of the respondents strongly agree that space layout is very important.

1 respondent indicated that flexibility of use of space is not applicable; 3 indicated it is important whilst 9 indicated that flexibility of use of space is very important when a company decides to lease or own their corporate real estate. Generally, 69.2% of the respondents strongly agree that flexibility of use of space is very important.

1 respondent believes that grade of offices is not applicable, 2 indicated that it is fairly important, 5 indicated that it is important while 5 indicated that grade of offices is very important when a company decides to lease or own their corporate real estate.

From the total respondents, 4 indicated that security is important while 9 of the respondents indicate that security is very important when a company wants to lease or own real estate. Generally, 69.2% of the respondents strongly agree that grades of offices is very important.

1 respondent indicated that ensuring space for future expansion is not applicable; 1 respondent indicated that it is fairly important, 3 of the respondents indicated that it is important while 8 of the respondents indicated that ensuring space for future expansion is very important when a company decides to lease or own their corporate real estate. Generally, 61.5% of the respondents strongly agree that ensuring space for future expansion is very important.

Leasing versus owning preferences

Five respondents in the survey indicated that their ideal preferences are to lease representing 41.7%; whilst 7 representing 58.3% would prefer to own.

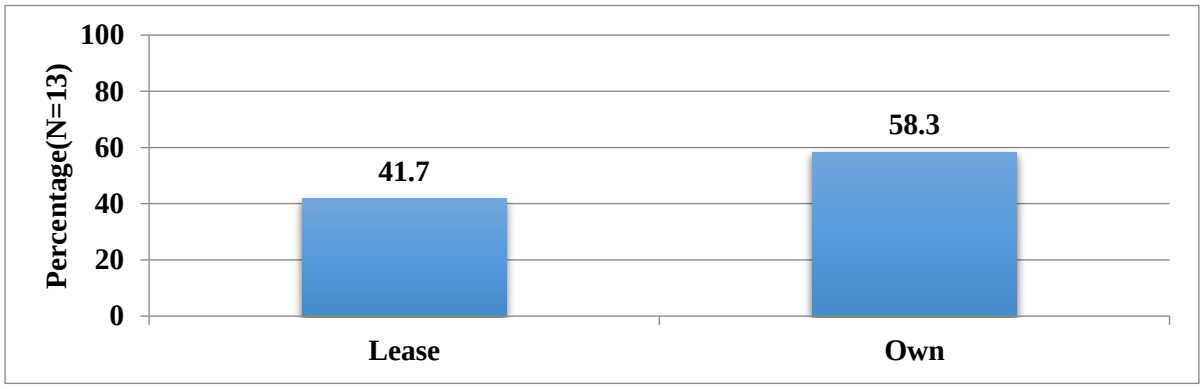


Figure 4.12: Lease vs own preference

The bar graph indicates that most of the respondents would prefer to own a real estate rather than lease.

The Binary Logistic Regression Model:

The final sample included 13 responses, which represents a response rate of 7.22%. Of this sample, 38.5% of the companies indicated lease-occupation while 61.5% a combination of leasing and owning. Table below demonstrates the itemisation of each of the potential non-financial determinants, which was derived from our review of literature based on the ownership status. The success of the logistic regression can be assessed by looking at the classification table which shows classifications of the dichotomous dependent variable and also, goodness-of-fit tests such as model chi-square (Hosmer and Lemeshow test) which is available as an indicator of model appropriateness as is the Wald statistic to test the significance of individual independent variables" (Barkham and Park, 2011).

Table containing the list of potential variables which requires testing.

No.	Dependent Variable	Description	Determination
1	OwnStatus	Lease or Own	Lease vs Buy Decision
	Independent Variables: Site Specific	**Description**	**Determinant Categories Site Characteristics**
1	LocJoh	Location in Johannesburg	Location of Site
2	LocPres	Prestigious location of site	Location of Site
3	LocClien	Proximity to key clients	Location of Site
4	LocSup	Proximity to suppliers	Location of Site
5	LocGenLab	Proximity to general labour	Location of Site
6	LocAcc	Access to airport, public transportation and freeway	Location of Site
7	LocVis	Visibility of site location	Location of Site
8	LocBusSer	Business support services	Location of Site
9	LocHQRes	Proximity to high quality residential neighbourhoods	Location of Site

	Independent Variables: Company-specific	Description	Determinant Categories Company Characteristics
	AnnTurn	Company's annual turnover	Size of Company
	NumEmp	Number of Employees	Size of Company
	BusSect	Operating Activity	Size of Company
	Constant	Other influential variables	Other

	Independent Variables: Physical Characteristics	Description	Determinant Categories Physical Characteristics
1	SiteMultTen	Site being multi-tenanted	Physical attributes
2	CarPark	Adequate Car Parking	Physical attributes
3	ExtApp	Exterior appearance of building	Physical attributes
4	SiteBrand	User recognisability	Physical attributes
5	SpaceLay	Space Layout	Physical attributes
6	SpaceFlex	Flexibility of use of space	Physical attributes
7	SpaceGrade	Office grade	Physical attributes
8	BuildSec	Security	Physical attributes
9	FutExpan	Ensuring space for future expansion	Physical attributes

Table 4.4: Potential Variables

Due to the limited number of responses the model could not be fitted as the number of observations were less than the model parameters. A number of iterations were tried in order to determine the best combination of independent variables that could fit the model. From all the permutations the model was able to fit four independent variables producing an outcome. The four variables used were prestigious location of site; visibility of site location; adequate car parking and flexibility of use of space.

The model was run to analyse the impact of prestigious location of site, visibility of site location, adequate car parking and flexibility of use of space at a 5% level of significance. From the data, 5 (38.5%) leased and 8 (61.5%) had a combination of owing and leasing. The outcome

variable had two values; lease which was coded as 0 and combination of lease and own coded as 1 as shown in Table 4.5.

Dependent variable Encoding

Original Value	Internal Value
Lease	0
Combination	1

Table 4.5: Dependant variable coding

Table 4.6 shows how the intercept only model predicts the response variable. Predicting a combination based on the most likely group will be accurate for 66.7% of the time and is based on the model without predictors. This table represents the results with only the constant included before any coefficients are included in the model. The Logistic regression compares this model with the model involving all the predictor variables to determine which of the models are more appropriate. From the table, suppose we knew nothing about our variables and guessed that a company would not lease, we would be 66.7% correct.

Classification Table

Observed	Predicted		Percentage correct
	Lease	Combination	
Lease	0	4	.0
Combination	0	8	100
Overall percentage			66.7

Table 4.6: Classification table

The overall significance of the model is tested using the Chi-Square Model (Table 4.7), which is derived from the probability of observing the original data under the assumption that the model that has been fitted is accurate. The omnibus tests provide a Chi-square significance statistics for step, block and model. The step Chi-square tests the contribution of the specific variables entered at the current step; the block Chi-square tests the contribution of all the variables entered with the current block and the Chi-Square tests the fit of the overall model. In this analysis, the Chi-Square model has 4 degrees of freedom with a p-value of 0.376. The results show that the predictor variables do not have a significant effect and do not create a different model apart from the model with the constant.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	4.227	4	.376
	Block	4.227	4	.376
	Model	4.227	4	.376

Table 4.7: Omnibus test

The Cox and Snell R square and Nagelkerke R square provide an indication of the amount of variability in the response variable. From Table 20, the Cox and Snell's R-Square statistics indicate approximately 29.7% of the variation in the dependent variable is explained by the logistic model. The Nagelkerke R square value indicates that there is 41.2% relationship between the predictors and prediction.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	11.049[a]	.297	0.412

Table 4.8: Model summary

Table 4.9 displays the variables in the equation with the Wald statistic, which indicates the significance of each of the predictors. The Exp(B) shows the effect of raising a predictor variable by one unit.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.693	.612	1.281	1	.258	2.000

Table 4.9: Variables in the equation

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	LocPres	1.125	1	.289
		CarPark	.407	1	.524
		SpaceFlex	.034	1	.855
		LocVis	.000	1	1.000
	Overall Statistics		3.656	4	.455

Table 4.10: Variables not in equation

Table 4.11 tells whether each predictor variable improves the model or not. From the table, none of the predictor variables are significant and would not have added to the predictive power of the model.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	5.085	7	.650

Table 4.11: Hosmer and Lemeshow test

Since the Hosmer and Lemeshow goodness of fit value of 0.650 is greater than 0.05, we fail to reject the null hypothesis that there is no difference between the observed and model predicted values. This implies that the model estimates fit the data and does not significantly differ from the observed data.

Classification Table[a]

Observed			Predicted		
			Q12		Percentage Correct
			Lease	Combination	
Step 1	Q12	Lease	2	2	50.0
		Combination	1	7	87.5
	Overall Percentage				75.0

a. The cut value is .500

Table 4.12: Classification table

From Table 4.12, 87.5% were correctly classified as a combination of lease and buy by the model while 50% were correctly classified as lease. Overall, 75% were correctly classified. This is an improvement over the 66.7% correct classification.

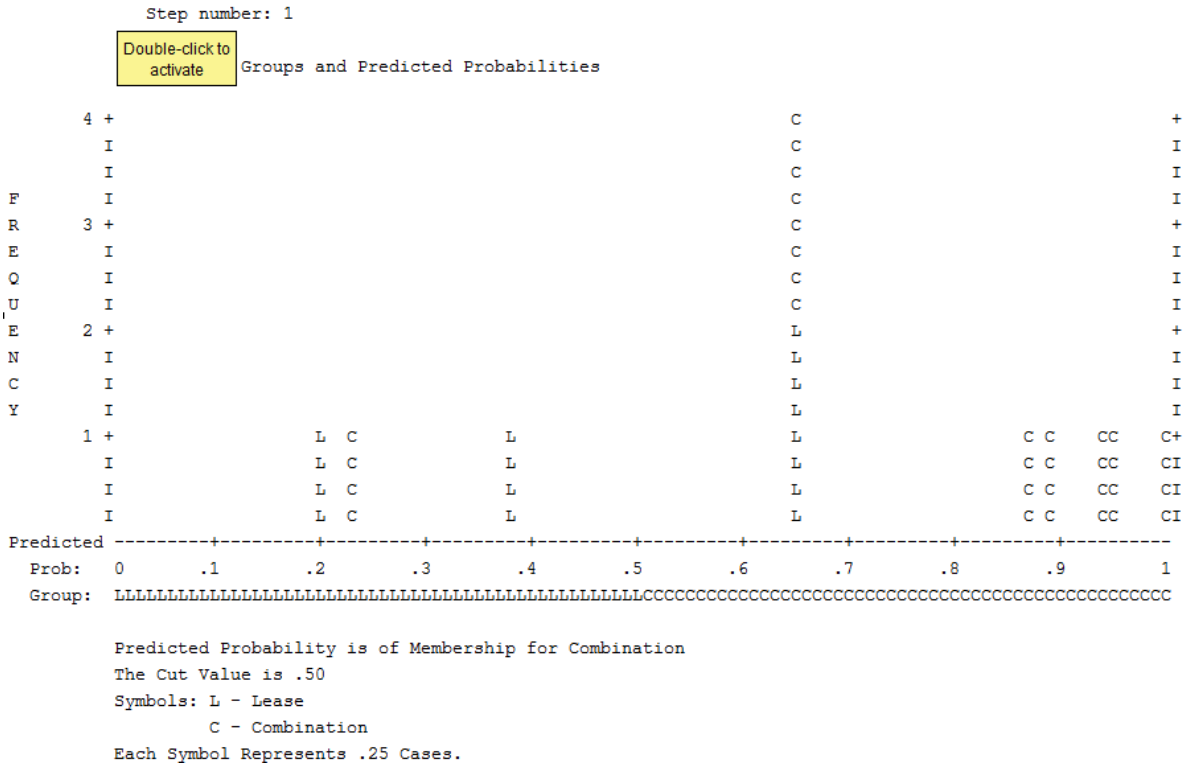
Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	LocPres	-3.008	2.138	1.980	1	.159	.049
	CarPark	.902	2.561	.124	1	.725	2.464
	SpaceFlex	.448	.852	.277	1	.599	1.565
	LocVis	1.844	1.266	2.120	1	.145	6.319
	Constant	-.323	10.016	.001	1	.974	.724

a. Variable(s) entered on step 1: LocPres, CarPark, SpaceFlex, LocVis.

Table 4.13: Variables used in the equation

From the table, none of the predictor variables are significant hence do not contribute to the prediction.


Step number: 1
Double-click to activate
Groups and Predicted Probabilities
FREQUENCY
Predicted
Prob: 0 .1 .2 .3 .4 .5 .6 .7 .8 .9 1
Group: LLLL

Results of Kruskal-Wallis

A Kruskal Wallis test was performed to determine whether there were statistically significant differences between a company's main operations in relation to the physical and locational attributes; the different positions people hold in the company and their opinion in relation the physical and locational attributes; whether a company has a corporate reals estate department or not and whether a company has an in-house or outsourced real estate function in relation the physical and locational attributes.

These are numbered in accordance with the numbering as contained in the questionnaire namely Questions 1, 2, 3 and 6. The following discussion pertains to the analysis relating to these questions. Where the p values are greater than 5%, it implies that there is no statistically significant variation between opinions implying that the groups agree that the variables are important when the decision is made to lease or own their corporate real estate.

Question 1

A Kruskal-Wallis test was conducted to determine if location preferences were different for companies whose main operations are sales, financial, professional services, and other services when deciding to lease or own a corporate real estate.

The results of the Kruskal-Wallis test shows that there is no statistically significant variation between the companies with different main operations when deciding to lease or own a corporate real estate.

	Degrees of freedom	Chi-Square value	P-value
Prestigious location of site	3	3.0691	0.3811
Proximity to key clients	3	5.1115	0.1638
Proximity to suppliers	3	1.5886	0.662
Proximity to general labour	3	4.3713	0.2241
Proximity to skilled labour	3	0.95411	0.8124
Access to airport, public transportation and freeway	3	3.2084	0.3606
Visibility of site location	3	1.7191	0.6327
Business support services (shopping, restaurants, banking etc)	3	4.8515	0.183
Proximity to high quality residential neighbourhoods	3	1.6812	0.6411

Table 4.15 Kruskal-Wallis test 1 of Q1

A Kruskal-Wallis test was conducted to determine if physical attributes of the real estate preferences were different for companies whose main operations are sales, financial, professional services, and other services when deciding to lease or own a corporate real estate.

The results of the Kruskal-Wallis test shows that there is no statistically significant variation between the companies with different main operations when deciding to lease or own a corporate real estate.

	Degrees of freedom	Chi-Square value	P-value
Site being multi-tenanted	3	0.4932	0.9204
Adequate Car Parking	3	2.32	0.5087
Exterior appearance of building	3	1.4791	0.6871
User recognisability (company branding)	3	1.795	0.616
Space Layout	3	4.6333	0.2007
Flexibility of use of space	3	1.1383	0.7678
Grade of offices	3	0.74303	0.863
Security	3	0.66111	0.8823
Ensuring space for future expansion	3	2.8707	0.412

Table 4.16: Kruskal-Wallis test 2 of Q1

Question 2

A Kruskal-Wallis test was conducted to determine if location preferences were different for people with different positions such as senior management and others when deciding to lease or own a corporate real estate.

The results of the Kruskal-Wallis test shows that there is no statistically significant variation between the companies with different main operations when deciding to lease or own a corporate real estate.

	Degrees of freedom	Chi-Square value	P-value
Prestigious location of site	1	2.3956	0.1217
Proximity to key clients	1	0.37651	0.5395
Proximity to suppliers	1	0.27357	0.6009
Proximity to general labour	1	0.49922	0.4798
Proximity to skilled labour	1	0.81355	0.3671
Access to airport, public transportation and freeway	1	3.46	0.06287
Visibility of site location	1	0.10708	0.7435
Business support services (shopping, restaurants, banking etc)	1	0.041467	0.8386
Proximity to high quality residential neighbourhoods	1	0.012846	0.9098

Table 4.17: Kruskal-Walls test 1 of Q2

A Kruskal-Wallis test was conducted to determine if physical attributes of the real estate preferences were different for people with different positions such as senior management and others when deciding to lease or own a corporate real estate.

The results of the Kruskal-Wallis test shows that there is no statistically significant variation between the companies with different main operations when deciding to lease or own a corporate real estate.

	Degrees of freedom	Chi-Square value	P-value
Site being multi-tenanted	1	3.0315	0.08166
Adequate Car Parking	1	0.94545	0.3309
Exterior appearance of building	1	0.04418	0.8335
User recognisability (company branding)	1	0.12273	0.7261
Space Layout	1	0.89091	0.3452
Flexibility of use of space	1	0.53182	0.4658
Grade of offices	1	0.7025	0.4019
Security	1	0.37879	0.5383
Ensuring space for future expansion	1	0.62945	0.4276

Table 4.18: Kruskal-Wallis test 2 of Q2

Question 3

A Kruskal-Wallis test was conducted to determine if location preferences were different for companies that have a corporate real estate department and those who do not have one when deciding to lease or own a corporate real estate.

The results of the Kruskal-Wallis test shows that there is no statistically significant variation between the companies with different main operations when deciding to lease or own a corporate real estate.

	Degrees of freedom	Chi-Square value	P-value
Prestigious location of site	1	1.2492	0.2637
Proximity to key clients	1	1.2271	0.268
Proximity to suppliers	1	2.4275	0.1192
Proximity to general labour	1	1.5129	0.2187
Proximity to skilled labour	1	0.29462	0.5873
Access to airport, public transportation and freeway	1	1.253	0.263
Visibility of site location	1	0.78523	0.3755
Business support services (shopping, restaurants, banking etc)	1	0.019006	0.8903
Proximity to high quality residential neighbourhoods	1	2.3551	0.1249

Table 4.19: Kruskal-Wallis test 1 of Q3

A Kruskal-Wallis test was conducted to determine if physical attributes of the real estate preferences were different for companies that have a corporate real estate department and those who do not have one, when deciding to lease or own a corporate real estate.

The results of the Kruskal-Wallis test shows that there is no statistically significant variation between the companies with different main operations when deciding to lease or own a corporate real.

	Degrees of freedom	Chi-Square value	P-value
Site being multi-tenanted	1	1.5577	0.212
Adequate Car Parking	1	0.43333	0.5104
Exterior appearance of building	1	2.0249	0.1547
User recognisability (company branding)	1	0.625	0.4292
Space Layout	1	0.3	0.5839
Flexibility of use of space	1	0.43333	0.5104
Grade of offices	1	1.2879	0.2564
Security	1	0.44444	0.505
Ensuring space for future expansion	1	0.58877	0.4429

Table 4.20: Kruskal-Wallis test 2 of Q3

Question 6

A Kruskal-Wallis test was conducted to determine if location preferences were different for companies that have an in-house corporate real estate function or outsource when deciding to lease or own a corporate real estate.

The results of the Kruskal-Wallis test shows that there is no statistically significant variation between the companies with different main operations when deciding to lease or own a corporate real estate.

	Degrees of freedom	Chi-Square value	P-value
Prestigious location of site	2	1.2505	0.5351
Proximity to key clients	2	1.4584	0.4823
Proximity to suppliers	2	2.4352	0.2959
Proximity to general labour	2	1.7224	0.4227
Proximity to skilled labour	2	0.74788	0.688
Access to airport, public transportation and freeway	2	1.7349	0.42
Visibility of site location	2	1.9933	0.3691
Business support services (shopping, restaurants, banking etc)	2	3.493	0.1744
Proximity to high quality residential neighbourhoods	2	3.2609	0.1958

Table 4.21: Kruskal-Wallis test 1 of Q6

A Kruskal-Wallis test was conducted to determine if physical attributes of the real estate preferences were different for companies that have an in-house corporate real estate function or outsource when deciding to lease or own a corporate real estate.

From the results in the table above, statistically significant differences exist in adequate car parking (p-value= 0.0488) and Flexibility of use of space (p-value=0.0488) between companies that have an in-house corporate real estate function and the companies that outsource.

The post hoc result indicates a significant difference between the companies with in-house function and the companies that partly outsource for adequate car parking and flexibility of use of space.

	Degrees of freedom	Chi-Square value	P-value
Site being multi-tenanted	2	1.8799	0.3907
Adequate Car Parking	2	6.04	0.0488
Exterior appearance of building	2	3.0019	0.2229
User recognisability (company branding)	2	0.69	0.7082
Space Layout	2	1.08	0.5827
Flexibility of use of space	2	6.04	0.0488
Grade of offices	2	3.3697	0.1855
Security	2	0.73333	0.693
Ensuring space for future expansion	2	3.5891	0.1662

Table 4.22: Kruskal-Wallis test 2 of Q6

Chapter 5
Conclusion

With other assets classes, the economic determinants are the principal drivers of the decision to lease or own. With real estate however, non-financial determinants make the decision more complex (Ghyhoot, 2003).There appears to be a gap in the literature, the role which non-financial determinants play in the decision to lease or own corporate real estate within a South African context.

A previous study on the non-financial determinants affecting the decision to lease or own corporate real estate was undertaken by Barkham and Park (2011), which focussed on the industrial sector in the UK. Our study is closely related to this study undertaken by Barkham and Park (2011) and is a straight replication of their study but within a South African context. A Kruskal Wallis test was also performed to determine whether there were statistically significant differences between the company's main operations; the different positions in the company; whether a company has a corporate reals estate department or not and whether a company has an in-house or outsourced real estate function in relation the physical and locational attributes.

The observations from the above study illustrates that although studies are predominantly conducted in the field of the financial determinants' contribution to the lease or own decision, there is a gap pertaining to the impact that non-financial determinants have in the decision making process.

A logistic regression model was developed to predict whether companies will lease or prefer a combination of leasing and owning their corporate real estate by using predictors such as prestigious location of site, visibility of site location, adequate car parking and flexibility of use. Responses pertaining to sole ownership were limited to 1 and therefore ignored. A data set of 13 companies were used in the study. The test of the full model against the model with only the constant was statistically insignificant indicating that none of the predictor variables were able to distinguish between companies which lease and those who have a combination of lease and owned corporate real estate (p-value=0.376). The Wald statistics also showed that none of the predictors made any significant contribution to the prediction. This was due to the small number of observations available. Due to the small number of observations for each case, the results from the logistic regression proved insignificant for locational and physical attributes as well as company specific characteristics as predictors of the lease versus buy decision for office corporate real estate.

The data was furthermore insufficient to establish whether a correlation exists between leasing and a combination of leasing and owning to specific subsectors such as sales, financial, professional services and other. More data will also have to be sourced in order to establish whether companies have a tendency to lease or own office space that is not specialised in nature and of general utilisation.

Conclusions of Kruskal-Wallis test indicated that there were no differences in opinion relating to the company's main operations to that of locational and physical attributes which implies that respondents are of the same opinion when they decide to lease or buy their corporate real estate.

There were no differences in opinion between people with different positions in the company in relation to locational and physical attributes, which implies that that they are of the same opinion when they decide to lease or buy their corporate real estate.

There were no differences in opinion between companies that have a corporate real estate department and those without one, in relation to locational and physical attributes which implies that that they are of the same opinion when they decide to lease or buy their corporate real estate.

There were no differences in opinion between companies that have an in-house corporate real estate function, outsource this function and those who partly outsource their corporate real estate department in relation to locational attributes which implies that that they are of the same opinion when they decide to lease or buy their corporate real estate.

There were no differences in opinion between companies that have an in-house corporate real estate function, outsource this function and those who partly outsource their corporate real estate department in relation to physical attributes except for adequate car parking and flexibility of use. This implies that that they agree on all the physical attributes bar from adequate parking and flexibility in use of space when they decide to lease or buy their corporate real estate. This phenomena can be fleshed out by conducting interviews with the respondents with differing opinion to understand the reason for disparity in their opinions.

5.2. Implications of the study

The results of this study are not conclusive enough to support the hypothesis that Location, Site specific and Company specific variables materially act as predictors of the probability that a firm will own or lease their corporate real estate. Barkham and Park (2011) highlights that

previous studies undertaken by Deng and Gyourko, 1999; Seiler et al., 2001; Liow, 2004; Brounen and Eichholtz, 2005 indicated a negative financial implication related with corporate real estate ownership. These studies substantiate their assumptions that supports the proposition that "financial factors alone are not determinative when it comes to the lease versus buy decision for corporate real estate" (Barkham and Park, 2011). The findings of this study, however due to the lack of sufficient data, does not confirm their outcome on the subject matter.

5.3. Limitations to the study

The data collected in this study did not confirm the impact of the company characteristics, locational and physical attributes of corporate office real estate as predictors of the lease versus buy decision for office corporate real estate in Johannesburg. The sample size is the main contributing factor to this outcome.

There were insufficient observations for all the variables in the logistic regression model to draw detailed inferences on the significance the roles that non-financial determinants play in the lease versus buy decision. It, therefore does not provide a solid foundation for making a convincing and well-informed connection and is not considered comparable to previous studies, due to lack of data. It is my view that a larger sample will produce enough observations in order for all the variables to provide a correlation on the impact that company characteristics, locational and physical attributes of corporate office real estate play in the lease versus buy decision. An increase in the number of respondents would ensure a higher confidence in the credibility of inferences drawn as the robustness of such inferences are generally dependent on sample size.

A larger sample size will safeguard against outlier variables and ensure a higher retention of variables in the equation. Data was sourced by means of a survey, which incorporated a well-designed questionnaire and could be supplemented by conducting interviews to ensure a credible base in order to provide a healthier content to the data collected.

Notwithstanding of the identified limitations, the findings of this study are sufficient to encourage further research in similar arenas across different asset classes and by doing so, it would improve the validity and reliability of the findings.

5.4. Recommendations

This report contributes to the already existing literature on corporate real estate in a South African context. It validates the need for a broader theoretical framework to examine the lease versus buy decision for office corporate real estate, which should not be restricted to financial aspects, but also include non-financial determinants such as locational, physical and company specific variables.

Further consideration should also be given to economics of real estate and it's alignment to business strategy, as discussed in this study. There are still some challenges that exist in this area of study in South Africa, especially related to the sourcing of data as companies are hesitant to disclose details, as they are of the opinion that it could affect their competitive advantage. This study however aims to construct the foundation for a theoretical framework which will enable future research in recognising difficulties that accompanies the corporate investment decision making process in South African.

Further to this there are physical risks such as poor design, obsolescence and regulatory risks, which could be factored into the decision to lease or own (Huffman, 2002), which is another potential area of study that could be undertaken in a South African context.

With the assessment of residual risk when deciding to lease or own corporate real estate, several reversionary alternatives may be an option; a sale and leaseback transaction being one of them (Huffman, 2002). Whether there are non-financial determinants, which should be considered when deciding to enter into this type of agreement, is a study that needs to be undertaken on its own within a South Africa context.

The logistic regression model in this application was found not to be robust due to unavailability of a credible sample size of data. Due to lack of sufficient data, none of the predictor variables were able to predict whether companies will lease or prefer a combination of lease and buy. The model is inclusive but could be better when sufficient data is available for the analysis. The results of the Kruskal Wallis suggests that the companies whose main operations are sales, financial, professional services and other services as well as people with different positions within the organization all agree that location preferences and physical attributes are important whenever they decide to lease a corporate real estate .

The limited time frame allowed for the collection of the data, coupled to the low response rate, as a major limitation, affected the robustness of the model resulting in an inconclusive outcome.

This study may however be considered as a pilot study that has set the foundation for a replication study, which under more favourable conditions may result in a higher response rate, which will yield a more robust model that will provide empirical evidence that non-financial determinants do play an important role in the decision making process when acquiring corporate real estate.

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Appendices

Appendix A: Survey Questionnaire

Default Question Block

Which of the following operations best describes your company's main operations?

Sales	Financial	Professional Services	Insurance	Recruitment and Training	Other (Please Specify)
○	○	○	○	○	○

What is your position in the company?

- ○ Senior Management
- ○ Middle Management
- ○ Junior Management
- ○ Non-management
- ○ Other (Please Specify)

Does your company have a corporate real estate department?

Yes	No
○	○

What is the job title of your company's corporate real estate unit head?

- ○ Executive Head of Corporate Real Estate
- ○ Head of Corporate Real Estate
- ○ Head of Facilities
- ○ Chief Financial Officer
- ○ Director of Properties
- ○ Other (Please Specify)

What are the functions your company's corporate real estate unit?

- ☐ Real Estate Finance
- ☐ Property Development
- ☐ Real Estate Acquisitions
- ☐ Real Estate Disposals
- ☐ Property Management
- ☐ Facilities Management
- ☐ Other (Please Specify)

Does your company have an in-house corporate real estate function or do you outsource this function?

- ○ In-house
- ○ Outsource

- Partly outsourced

If partly outsourced, which functions do you outsource and which functions do you undertake in-house?

	In-house	Outsource
Real Estate Finance		
Property Development		
Real Estate Acquisition		
Real Estate Disposal		
Property Management		
Facilities Management		
Other (Please Specify)		

Which suburb/s are your offices located in?

- Bedfordview/Bruma/Greenstone
- Bryanston
- Johannesburg CBD/Parktown and Surrounds
- Constantia Kloof/Cresta/Blackheath
- Fourways
- Melrose Arch/ Waverley
- Morningside/Rivonia/Edenburg
- Randburg CBD/Ferndale
- Rosebank/Illovo/Hyde Park/Dunkeld/Houghton/Killarney
- Sandton CBD and immediate Surrounds
- Sunninghill/Woodmead
- Waterfall
- Other (Please Specify)

What is the number of employees on your site?

Under 100	100 - 500	501 - 1 000	1 001 - 5 000	>5 000

How many employees does your company employ?

- Under 100
- 100 - 500
- 501 - 1 000
- 1 001 - 2 500
- 2 501 - 5 000
- 5 001 - 10 000
- >10 000

What is your company's annual turnover?

- Under R5 000 000
- R5 000 000 - R40 000 000
- R40 000 001 - R250 000 000
- R250 000 001 - 1 000 000 000
- >R1 000 000 000

Does your company lease or own the company's real estate?

Lease	Own	A combination of owning and leasing
○	○	○

When deciding to lease or own your corporate real estate, how would you rate the significance of the following locational aspects on a scale of 0 - 4, where 0 being that the factor is not applicable to your company; 1 being the least important and 4 as the most important.

	Not Applicable	1 (not important)	2 (Fairly important)	3(Important)	4(Very important)
Prestigious location of site	☐	☐	☐	☐	☐
Proximity to key clients	☐	☐	☐	☐	☐
Proximity to suppliers	☐	☐	☐	☐	☐
Proximity to general labour	☐	☐	☐	☐	☐
Proximity to skilled labour	☐	☐	☐	☐	☐
Access to airport, public transportation and freeway	☐	☐	☐	☐	☐
Visibility of site location	☐	☐	☐	☐	☐
Business support services (shopping, restaurants, banking etc)	☐	☐	☐	☐	☐
Proximity to high quality residential neighborhoods	☐	☐	☐	☐	☐

When deciding to lease or own your corporate real estate, how would you rate the significance of the following physical attributes on a scale of 0 - 4, where 0 being that the factor is not applicable to your company ; 1 being the least important and 4 as the most important.

	Not Applicable	1 (Not Important)	2 (Fairly important)	3 (Important)	4 (Very Important)
Site being multi-tenanted	☐	☐	☐	☐	☐
Adequate Car Parking	☐	☐	☐	☐	☐
Exterior appearance of building	☐	☐	☐	☐	☐
User recognisability (company branding)	☐	☐	☐	☐	☐

Space Layout	☐	☐	☐	☐	☐
Flexibility of use of space	☐	☐	☐	☐	☐
Grade of offices	☐	☐	☐	☐	☐
Security	☐	☐	☐	☐	☐
Ensuring space for future expansion	☐	☐	☐	☐	☐

What is your ideal preference, if not given current limitations of choice?

Lease	Own
○	○

Appendix B: Data Collection Instrument Substantiation

Question	Reference
1. Company's main operations	(Barkham and Park, 2011) (Leishman, C. and Watkins, C. 2004)
2. Position held in the organisation	(Barkham and Park, 2011)
3. Presence of corporate real estate function	(Barkham and Park, 2011)
4. Job title of company's corporate real estate unit head	(Barkham and Park, 2011)
5. Functions company's corporate real estate unit	(Barkham and Park, 2011)
6. In-house or outsource corporate real estate management services	(Barkham and Park, 2011)
7. Functions outsourced vs functions undertaken internally	(Barkham and Park, 2011)
8. Location of offices	(Barkham and Park, 2011)
9. Number of employees on site	(Barkham and Park, 2011)
10. Number of employees the company employs	(Barkham and Park, 2011)
11. Company's annual turnover	(Barkham and Park, 2011)
12. Ownership status	(Barkham and Park, 2011)
13. Significance of locational attributes in the LVB decision	(Barkham and Park, 2011)
14. Significance of physical attributes in the LVB decision	(Barkham and Park, 2011) (Remoy HT, et al,2007) (CRES, 2005)
15. Ownership preference	(Barkham and Park, 2011)