

**THE RELATIONSHIP BETWEEN FIRM SIZE AND MARKET
PERFORMANCE OF NAMIBIA'S INVESTMENT MANAGEMENT FIRMS**

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ABSTRACT

This study had the objective of examining the effects of firm size on market performance of investment management firms in Namibia using fixed effects method estimation to analyse panel data for the period 2003-2017. Return on investment was used as a proxy to measure firm performance, while assets under management and number of employees were employed as the main variables of interest to measure firm size. Capital invested, volume of sales and technology investment were employed as firm size control variables. The results show that assets under management and number of employees had a positive impact on return on investment. However, at 5% confidence level the number of employees was statistically insignificant. Capital invested, volume of sales and technology investment is positively correlated to performance and the relationship was statistically significant. Based on the premise that no study has to date been done in the Namibian context detailing the relationship of firm size and market performance of investment management firms, this study looked to set the foundation in academic literature in the Namibian context. The study recommends that small firms in the industry increase their performance by increasing their assets under management and capital investment through identifying the optimal debit and equity mix that fits their firm strategy. It additionally recommends firms to increase their volume of sales and technology investment. In terms of number of employees, it is advisable that they focus on quality as opposed to quantity. Firms need to focus on employing competent employees in the relevant departments and more especially those in the financial analysis and investment department. With regards to potential market entrants, this study recommends that firms position their capital, human resources and technology

investments way beyond the required bare minimum as this will positively affect their performance and ultimately their survival and sustainability. Policy makers are recommended to give greater importance on the need to create mechanisms such as providing information to current small players and new entrants on ways to improve performance in the market. It can additionally encourage firms through policies to create capacity that allows for listing on the Namibian Stock Exchange for purposes of raising capital. This study suggests that it would be research-worthy for future researchers to employ variables such as Return on Assets (ROA) as proxies of firm performance, and variables such as leverage, liquidity and solvability as firm-level controlling variables. Also, other variables such as interest rate, inflation and capital market development as controlling macro variables. This would help shed more light on the relationship of these variables and firm performance.

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DEDICATION

This thesis is dedicated to:

My Mother: Ragel Ndeshi Shikuyele

My Brother: Listo Iyaloo Shikuyele

I appreciate your support, love, prayers and encouragement throughout this journey. Thank you believing and investing in me tirelessly. Without you I wouldn't have achieved half the things that I have in life. Mee Ndeshi, I am yet to understand how you are always financially ready to pay for my studies. You have done so much for me over the years and I am truly grateful. Your presence is a constant reminder that there is a living God that still hasn't given up on me. Iyaloo, you are the epitome of love and patience. Thank you for everything that you do for me. You are the best, don't let anyone tell you otherwise. **To my late father, you would have been so proud, I KNOW.**

DECLARATION

I, Margareth Vaefeni Shikuyelev hereby declare that this thesis is a true reflection of my own work and that this work or part thereof has not been submitted for a degree in any other institution of higher education. Any assistance that I have received has been duly acknowledged in the study. No part of this thesis may be reproduced, stored in any system, or transmitted in any form, or means (e.g. electronic, mechanical, photocopying, recording or otherwise) without the prior permission of the author, or the University of Namibia on that behalf. I, Margareth Vaefeni Shikuyelev, grants the University of Namibia the right to reproduce this thesis in whole or in part, in any manner or format, which The University of Namibia may deem fit, for any person or institution requiring it for study and research, providing that the University of Namibia shall waive this right if the whole thesis has been or is being published in a manner satisfactory to the University.

Signature of student

Date

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ACRONYMS AND ABBREVIATIONS

NEPRU	Namibia Economic Policy Research Unit
MTI	Ministry of Trade and Industry
SME	Small and Medium Enterprises
NAMFISA	Namibia Financial Institution Supervisory Authority
ISE	Istanbul Stock Exchange
AM	Assets under Management
NE	Number of Employees
CI	Capital Invested
VS	Volume of Sales
TI	Technology Investment
RI	Return on Investment

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Namibia has a fairly developed financial sector, and a reasonably vibrant securities sub-sector of which investment management firms are an integral part of. According to the NEPRU Research Report (2004) the performance of many local investment management companies faltered and small new entries into the market have over the years exited the Namibian financial sector. This begs the question whether the size of these Namibian investment management companies and the size of new entrants in the market is the single cause of their poor performance? Investment management firms in Namibia are regulated and supervised by the Namibia Financial Institutions Supervisory Authority (NAMFISA) an independent institution established by virtue of Act No. 3 of 2001. Namfisa (2017) requirements stated that for a company to be registered as an investment management firm, it needs to have a portfolio manager who has been practicing for not less than three years. Namfisa is silent on the total number and type of human resource capital that the investment management firm should have before getting registered or while operating as an investment management firm. This has seen a proliferation of small new entrants in the sector consisting of one to three staff members over the past years. However, new entrants have been exiting at the same pace due to poor performance. In this context the term “*small*” is viewed within the context of the Ministry of Trade and Industry’s definition of an SME. Noticeably the Ministry of Trade and Industry (MTI) in its SME policy of 1997, defined small companies as those that employ less than 10 people, and have a turnover of less than N\$1 000 000 with a capital

base of less than N\$500 000. Distinctively most of the investment firms that fail, fall within the small company bracket. According to Prasetyantoko and Parmono (2015) there are divergent views on the relation between firm size and performance. Firm size could be one of the most important factors that affects a firm's performance.

Saliha and Abdessatar (2011)'s study found a positive relationship between firm profitability and size. Additionally, Jonsson (2007)'s analysis showed that big firms have a higher profitability compared to small firms. However, authors like Ammar (2003) found a negative relationship between firm size and profitability. This study examines whether the size of these new entrants and existing investment management companies is the cause of the poor performance. The broader aim is to establish whether there is a relationship between the size and the performance of a company. The importance of ensuring that these new entrants and investment management firms consistently perform cannot be understated as the growth of our financial market is largely dependent on the new entrants in the market as well as the survival of the existing investment management firms. An empirical study of the relationship between firm size and performance therefore shows whether or not smaller and/or relatively new investment managers are being screened out of sources of business, which constrain growth, and the development of the investment management sub-sector.

1.1.1 Firm Size and financial performance

Firm size remains a poorly defined concept, and empirical studies have tended to revert to proxies such as number of employees, total assets, sales, or market capitalisation (Trigueiros, 2000; Chongyu & Frank, 2015). Reverting to proxies fosters a wide spectrum of understanding the nature of the size of the business or firm, therefore, it is

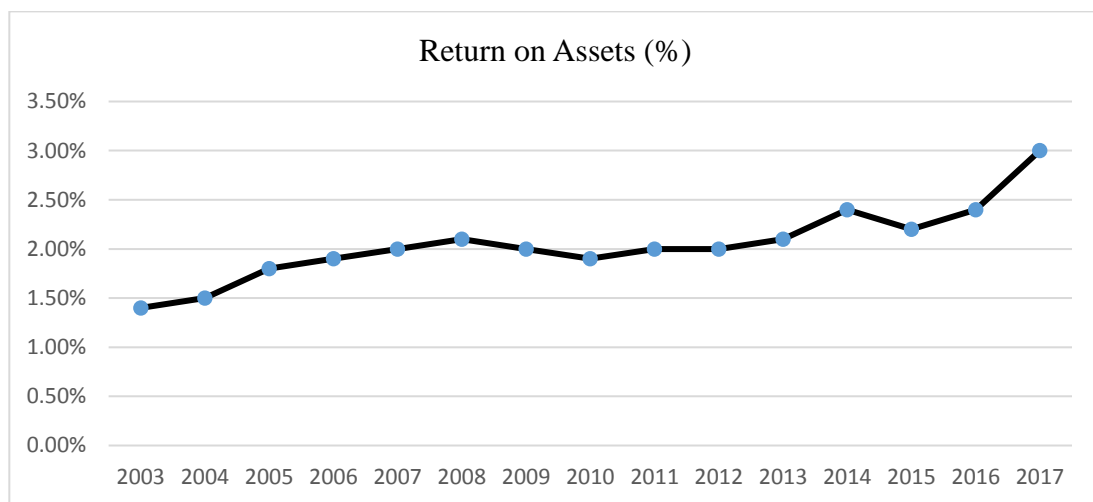
imperative to measure firm size according to proxies. In other words, it makes sense to define the size of a firm in terms of different proxies rather than generalising it to the number of employees only, which could be an unreliable benchmark. Chongyu and Frank (2015) further highlight that different aspects are captured when measuring firm size with different proxies of which total assets, total sales and market value of equity are the most common. In this study, firm size is measured using: assets under management and number of employees as the main variables of interest, while capital invested, volume of sales and technology investment are employed as control variables. Financial performance is measured by return on investment (RI).

1.1.2 Namibia's Investment Management Industry

There are currently 26 investment management firms registered with the Namibia Financial Institutions Supervisory Authority (NAMFISA), managing over 18.5 billion assets (Namfisa, 2018). Section 4 (1) (f) of the Stock Exchange Control Act, 1985 (Act No. 1 of 1985) has favourable requirements for registration of investment managers and some of the requirements include private company registration, start-up capital of about N\$250 000, appointment of an auditor and appointment of a banking institution in Namibia as custodian (Namfisa, 2018). According to Bank of Namibia (2017) the asset management industry grew by 10.6% in 2017, with assets under management of estimated at N\$220.2 billion. During the 2017 financial years, investment managers largely managed pension funds worth about N\$85.4 billion, accounting for about 52% funds under management. Unit trust schemes accounted for 19.1% of the total assets which translated to an increase of N\$7.1 billion. In 2013, Namibian capital market authorities promulgated Regulation 28, which, among other issues, requires that pension

and provident funds invest at least 35% of their funds in domestic assets, with unlisted investments limited to a maximum of 3.5% (Namfisa, 2018). The regulation has spurred entry of new investment managers into the sector as well as an increase in assets under management.

Below a graph indicating the return on assets (%) of the asset management industry for the period 2003-2017:



Source: Namfisa

The industry has been on a growth trajectory for the past 15 years and this growth has been supported by Regulation 28 of pension and provident fund amongst other factors. Namibia's financial sector is closely linked to South Africa's financial sector. This enables Namibia's financial institutions to diversify their risk as strong ownership ties and common good practices with reputable financial institutions in South Africa assist with mitigating weaknesses in limited domestic skills, domestic supervision and regulation. South Africa, in its investment management performance, boasts of an estimated 32 firms that manage approximately 4% of a total investment and savings pool

of about R6.5 trillion but is biased on racial lines rather than on size of asset management firms (27four Investment Managers, 2014). In other words, access to investment funds is not easy for black asset management firms. This has led to frustrations by these firms in the industry. For instance, black managed firms have not been able to penetrate the unit trust market which is currently valued at over R1.6trn (27four Investment Managers, 2016).

1.1.3 General performance of Investment Managers and their Selection

Investors normally choose performing investment managers to manage their investments and they have the criteria for use in choosing these firms so that they do not end up in bad investments. According to Evensky, Horan & Robinson (2011) most investors select investment managers-based on criteria that includes the following: track record (performance); expertise; and investment process structure (strategy). Performance is therefore an overriding determinant of manager selection. Despite the traditional warning that “past performance is no guarantee of future performance” most investors begin the manager selection process with the manager’s past performance (Evensky, Horan & Robinson, 2011).

1.2 PROBLEM STATEMENT

Despite Namibia’s investment management industry being a vibrant marketplace, the performance of new firms and small existing investment management firms has been very unsatisfactory. According to the NEPRU Research Report (2004) new small investment firms have been exiting the sector due to poor performance. According to Bank of Namibia (2005) small and medium sized firms in Namibia suffer greatly as they

do not fit well within the existing financial structure. It seems the Namibian financial industry is only fit for large firms.

Several studies found that firm size is one of the most important factors that determines the financial performance of a company, see for example (Kumar, 2016). However, other studies indicated that firm failure rates are associated with interest rates, leverage, liquidity, solvency, inflation and capital market development (Liu, 2004). Furthermore, Liu (2004)'s study also found that among those macroeconomic variables, interest rate appears to be an important factor influencing failure rates and could be used as a feasible policy instrument to reduce the incidence of firm failures. Additionally, Rangan (1998) maintained that the short-term over performance and long-term underperformance of seasoned equity offerings are due to earnings management, whereas Papadaki, and Siougle (2007) attributed them to the timing of initial public offering of issuing firms.

Literature seems to suggest that interest rate, earnings management, share placement, are some of the factors that influence financial performance. However, in Namibia firm size seem be part of the factors that determine market performance. Although many authors like Olawale, Ilo and Lawal (2017), Conway (2017) and Kumar (2016) examined the relationship between firm size and performance, this relationship has not been examined yet in relation to investment management firms in a Namibian context. Thus, this study aims to examine the effects of firm size to market performance in the context of the Namibian investment sector.

1.3 OBJECTIVES OF THE STUDY

The objective of the study is to examine the relationship between firm size as measured by (assets under management, number of employees, capital invested, volume of sales

and technology investment) and market performance as measured by return on investment.

1.4 RESEARCH HYPOTHESIS

Based on the literature review it appears that the firm's performance is affected by firm size factors such as assets under management, number of employees, capital invested, volume of sales and technology investment. The corresponding null hypothesis would thus be firm performance is not dependent on firm size:

H_0 = Firm performance is not dependent on assets under management.

H_1 = Firm performance is dependent on assets under management.

H_0 = Firm performance is not dependent on number of employees.

H_2 = Firm performance is dependent on number of employees.

H_0 = Firm performance is not dependent on capital invested.

H_3 = Firm performance is dependent on capital invested.

H_0 = Firm performance is not dependent on volume of sales.

H_4 = Firm performance is dependent on volume of sales.

H_0 = Firm performance is not dependent on technology investment.

H_5 = Firm performance is dependent on technology.

1.5 SIGNIFICANCE OF THE STUDY

The findings of this study will greatly contribute to the growth of the Namibian financial

sector as it will shed light on firm size factors that affect market performance. It additionally reinstates the importance of all financial market players, hence the importance of ensuring that new entrant and investment management firms consistently perform. This is important as the growth of the Namibian financial market is largely depended on all market players regardless of size. The study may assist policy makers in their policy formulation functions relating to the entry requirements and technical support required to assist the growth of the industry by formulating regulations relating to the acceptable capital, human resource capital and technological requirements of new entrants. This would help ensure that they have adequate capacity to perform better. For the researchers, the study sets a foundation for them to carry out further studies in the same field which may lead to new findings to enhance understanding of the problem investigated in this study.

1.6 LIMITATIONS OF THE STUDY

This study is a case study of the effects of firm size on market performance of investment management companies in Namibia. The study was therefore not generalised to other firms in other sectors in Namibia. The study only took into account assets under management and the number of employees (as main independent variables of interest), while capital invested, volume of sales and technology investment were employed as independent control variables. Return on investment was employed as a dependent variable. Other possible variables such as leverage, liquidity, solvency, interest rate, inflation and capital market development which might influence a firm's performance were not included as the time set for submission of this paper would not allow it.

1.7 DELIMITATIONS OF THE STUDY

The delimitations of the study are related to the sample setting and location, and this reduced the scope of the survey. The scope of the study was limited to an investigation of the relationship between firm size and market performance of Namibia's investment management firms. The study was conducted in Windhoek, Namibia. Registered Namibian investment management firms constituted the population of the study.

1.8 OUTLINE OF THE STUDY

This study consists of five chapters as follows:

Chapter 1 presents an orientation of the study, research problem, research objective, the significance of the study, limitation of the study, and the conclusion.

Chapter 2 presents a comprehensive literature review divided into appropriate headings and sub-headings to give a broader theoretical knowledge on the subject.

Chapter 3 presents the methodologies followed in conducting the study such as the research design, population, sampling methods, and the research instruments used to administer, collect, analyse and present data.

Chapter 4 makes a presentation of the research findings and data analysis.

Chapter 5 presents the conclusions and recommendations.

1.9 CHAPTER SUMMARY

In this chapter, the background of the study as well as the research problem were presented. The primary objective of the study, the relationship between the firm size as measured by (assets under management, number of employees, capital invested, volume of sales and technology investment) and its relation to market performance was also

presented. The significance of this research was presented. An overview of each chapter of the study was also presented. The next chapter presents a review of relevant theoretical and empirical literature.

CHAPTER 2

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter communicates the critical review of both the theoretical framework and empirical evidence on the impact firm size has on market performance. The literature review was guided by research objectives aimed to address the following dimensions: firm size as measured by (assets under management, number of employees, capital invested, volume of sales and investment on technology's impact on market performance. Section 2.1 focuses on the core theoretical literature, namely: the growth of the firm theory, x-efficient and economic theory, neoclassical theory, managerial theory and the theory of optimal size.

The theoretical literature outlines the rationale for a firm's existence and the underlying factors that sustain such existence. The aim of the literature review in this section is to determine whether performance is an underlying factor to the firm's existence. Section 2.2 focuses on empirical literature which helps to identify any gaps that may be present in past studies and additionally helps the researcher identify firm size variables used by other authors. Thereby, positioning the study to current discourse around firm size factors affecting market performance globally and in so doing the study underscores the significance of the need for undertaking it and how it might contribute to filling such gaps in a Namibian context. Section 2.3 contains the conceptual framework. Section 2.4 provides a summary of literature review and its application to firm size and performance in a Namibian context.

2.1 THEORETICAL LITERATURE

This study reviewed the literature that estimated the relationship between firm size and financial performance. To put it in context, the growth of firm theory speaks to market performance and indicates that economies of scale amongst other variables determines firm performance, while x-efficiency and economic theory indicates that big firms have an advantage in terms of performance. The neoclassical theory stated that a firm's performance is determined by factors in the environment in which a firm operates. The managerial theory states that competent managers have a positive impact on firm performance and that their function in a firm is to maximize performance. The optimal firm size theory states that firm size is strongly dependent on the market structure (perfectly competitive market or an imperfectly competitive one) that a firm is operating in. Additionally, the optimal firm size theory concludes that small firms grow and perform better than large firms until they reach the minimum efficient scales of production.

The aforementioned theories try to provide details as to why firms exist, structures that form firms, market boundaries and why differences exist in terms of their performance. The theories on why firms exist can possibly be divided into two groups: 1) those that argue that firms only have one aim and 2) those that argue that firms are multi-purpose vehicles. The foundation of the group that believes firms only have one aim is the traditional theory that focuses on firm profits. However, group two that believes firms are multi-purpose vehicles take into consideration the internal and external variables that differentiate firm ownership and managerial functions, which speaks to the core of managerial firm theory which was formed by Baumol, Williamson and Marris (Pervan

and Visic, 2012). The managerial firm theory assumed that management goals are different from that of the owners hence some authors speak on the principal agent theory, which suggest that the separation of ownership and management leads to managers operating firms for their own interest hence some firms' performance is poor compared to those operated by their owners. In addition, the principal agent theory noted by Jonsson (2007) presented two categories of theories that argue that firm size matters namely the strategic theory (highlighted in X-efficient and economic theory) and institutional theory (explained in the theory of optimal firm size).

2.1.1 Growth of the firm theory

Growth of the firm theory was based on Penrose (1959) principles that govern firm growth. These principles were based on the initial reason as to why firms exist and outlined the key elements of firm management such as opportunities of production depending on firm activities. Hart (2000) defines firm theory as “behaviour of a firm in pursuit of profit maximization, analysed in terms of what are its inputs, what production techniques are employed, what is the quantity produced, and what prices it charges. The theory suggest that firms generate goods to a point where marginal cost equals marginal revenue, and use factors of production to the point where their marginal revenue product is equal to the costs incurred in employing the factors” (P.6).

Penrose (1959) theory of effective management of firm's resources, opportunities and diversification strategies explains the links between resources, capabilities and competitive advantage. It further states key contentions concerning linkages among firm's resources, productive opportunities, and profitable firm growth. Penrose (1959)

provides affluence between resources and production opportunities for growth and innovation, driven by management decisions. Firms can create economic value by effective and innovative management of resources.

However, there are differences between productive resources and productive services. Given the same amount of resources, services that these resources can render will be distinctive depending on the sector of industry the service is being rendered. Many authors criticise Penrose's theory by arguing that firm growth is more than just resources and competitive advantage. Baumann and Kaen (2003) argue that firm performance takes into consideration the industry that a firm operates in, economies of scale, cycle that the business environment is in, product price and market power. In terms of management that runs the business, Baumann and Kaen (2003) argues that skills and knowledge of the team are catalyst to firm performance. Some of these factors mentioned by Baumann and Kaen (2003) are what the human capital model support. This theory specifically addresses the main reason why firms exist which is to maximize profits and states that performance is driven by input factors. It specifically highlights sales as an important element for firm growth and performance.

2.1.2 X-efficient and economic theory

Economic theory prescribes that increasing firm size allows for incremental advantages such as leverage gains on economies of scale and attracting and retaining human capital for better performance. Chrystal and Lipsey (1997) state that firm size enables firms to raise barriers of entry of potential entrants in certain markets, which further gives big firms an advantage in terms of performance. Additionally, high barriers to entry reduces

competition and gives existing firms potential to earn high profits. This is evident in the Namibian financial sector where large investment management firms like Old Mutual outperform the small investment management firms. Large firms have the capabilities of implementing more effective mechanisms that allow them to generate high performance compared to small firms. However, authors like Amato and Wilder (1990) suggest that size is correlated to market power and that the more power a firm has the higher potential for x-inefficiencies which leads to low performance. On the other hand, authors like Barney (1991) suggest that firm performance is based on internal factors such as firm size, market share and level of management skills.

2.1.3 The neoclassical theory

The neoclassical theory states that an organisation is a combination of informal and formal factors which motive is driven by generating profit. The theory is thus driven by the principals of cost-minimizing and profit-maximizing factors of business environments. However, the theory additionally states that it should be noted that firms operate in environments with factors that can affect the firms' performance and these factors may be beyond the firms' control. This implies that firm growth is determined by external factors as well as internal factors (Tsoulfidis, 2011). In the 1930s many researchers were dissatisfied with conceptions of the neoclassic theory communicates and in turn formed the managerial theory of firms. The neoclassic theory does not specifically correlate size with performance but mentions external factors as a determining factor for firm performance.

2.1.4 The managerial theory

In an exertion to better explain the neoclassical “black box”, the managerial theory explains the complex nature of the modern firm. According to Olawale, Ilo and Lawal (2017), firms hire managers to increase sales or maximize revenue rather than for profit maximization. The managerial theory centres on the function of a manager as revenue maximization agent. It speaks on how managers are employed based on knowledge and skills and how they are aligned to accomplish the organisations goals. The theory states that organisations should aim to increase their output and to try to increase their market share as this will eventually lead to an increase in sales. However not everyone agrees with the theory and argues that cost minimisation and profit maximization should be the core of management functions, indicating that the neoclassical theory is indeed what firms should employee.

2.1.5 The theory of optimal firm size

To respond to the discrepancies of the managerial theory that many believe is limited, the optimal firm size theory states that firm size is depended on many considerations which include the structure in which firm operate in whether it operates in a perfectly competitive market or an imperfectly competitive one for example an oligopoly, or monopolistic competition. According to Pervan and Visic (2012) firms seek to behave in ways that are defined by the structure they operate in, as a deviation from these structures might lead to them being singled out which effects their growth. Hence firms adopt common approaches to business. The theory of optimal firm size additionally suggests that small firms grow until they reach an efficient scale of production. It suggests that firms with market power are prone to deviate from optimal cost of

production, which effect their ability to reach optimal firm size. Hence a firm's ability to grow depends on innovation and the demand for its products. Namibia's financial sector is predominately bank based and 70% of the sector is held by not more than 10 key industry players of which most has close ties with South African financial institutions (Shiimi, 2017). The Namibian financial sector market (of which investment management firms are a part of) can be classified as an oligopolistic financial market because a few firms in the industry take up over 70% of the market share leaving the remaining 30% for the majority of the firms in the market. This theory implies that firm size is not a factor in market performance but rather performance is driven by the competitive or non-competitive environment in which a firm operates in.

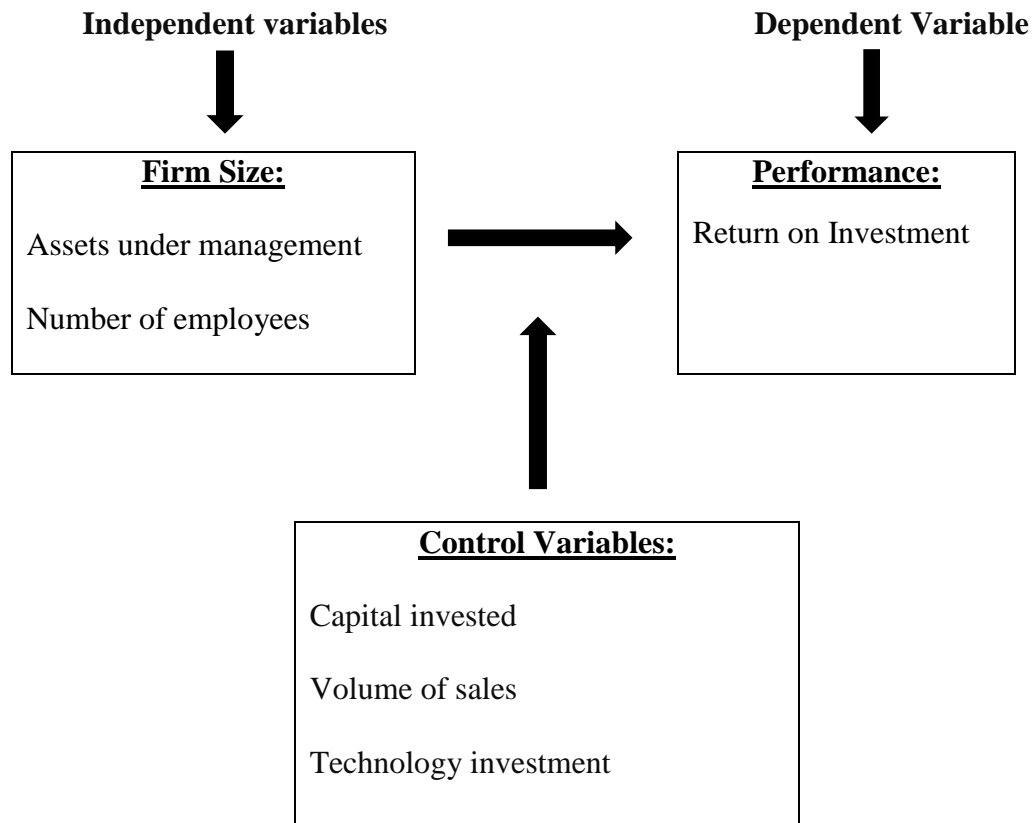
2.1.6 Conceptual Framework

Consistent with the studies independent, dependent and control variable, this conceptual framework provides a congregative map showing the relationship between the variables. The independent variable are assets under management and number of employees. The dependent variables is return on investment, while the control variables are capital invested, volume of sales and technology investment.

The study by Kartikasari and Merianti (2016) found that firm size and market performance are positively related. The authors urges that assets under management is particularly an important variable as this is in essence the mere existence of investment management firms, which allows a firm to trade in order to generate profits for investors. Authors such as Olawale, Ilo and Lawal (2016) and Conway (2017) who used number of employees, capital invested, volume of sales and technology investment,

similarly indicated that competent human capital equipped with adequate technology are as important as capital invested because they are the driving force behind the firm's ability to generate sales and profits for investors.

Figure 1: Conceptual framework.



2.2 EMPIRICAL LITERATURE

Several empirical studies on the relationship of firm size on performance have been conducted and have generated mixed results ranging from those supporting a positive relationship to those opposing it (Pervan and Visic, 2012).

Gschwandtner (2005) examined data over the period 1950 to 1999 and concluded that performance is more associated with industry characteristics such as concentration and growth and that large firms are more profitable than small firms depending on the industry they operate in. Similarly, Prasetyantoko and Parmono (2015) examined firm size and market performance from different industries and concluded that firm size influences performance, but not in all industries. This implies that performance is determined by other factors such as product price, and business cycles. Hence the author's opinion of relationship between firm size and performance not being the same for all industries. Agiomirgiannakis, Voulgaris and Papaogonas (2006) stated that firm size is significant when it comes to a firm's ability to produce highly advanced technological products. Firms in such industries are highly concentrated, have minimum competition and have access capital markets which pose as a challenge to small firms. Hence large firms have more access to profitable market opportunities.

Haloks and Tezermes (2006) studied the relationship between performance and firm size. Looking at 395 companies with different levels of foreign ownership in the Greece production sector for the period 1995 to 2001, they calculated the rate of efficiency and used input data analysis. The authors employed return to scale, liquidity ratio, number of staffs, tangible fixed assets, intangible fixed assets, and percentages of foreign ownership as inputs variables and used net sale and profit margin as outputs variables. The study divided the companies into three groups of small, large and medium size companies. Were 252 companies were identified as small, 101 companies as medium and 42 companies as large. The results indicated that the performance and productivity of small foreign-owned companies were higher than medium and large companies. The

study further stated that smaller firms are more flexible and easily adapt to changes in the business environment hence the concluded result. Ozgulbaş et al. (2006) studied the relationship between firm size and performance of quoted firms on the Istanbul Stock Exchange for the period 2000-2005 and found that big firms have high performance compared to small firms. Similarly, a study by Jonsson (2007) of firms operating in Iceland showed that big firms have higher profitability than small firms.

Papadognas (2007) conducted a study on a sample of 3035 Greek manufacturing firms for the period 1995-1999. By applying a regression analysis and dividing the firms into four size classes the author concluded that for all size classes, firm size has a positive effect on firm performance.

Serrasqueiro and Nunes (2008) employed data over a period 1999-2003 to study the relationship between firm size and performance of firms operating in Portugal and found a positive relationship between size and performance. Similarly, Vlachvei and Notta (2008) conducted a study that looked at the impact of firm-level variables on the growth of firms operating in Greece. The study examined financial data of 178 manufacturing and trading firms listed on the Greek Stock Market, for the period 1995- 2000. Vlachvei and Notta (2008) results indicated that the relationship between growth, size and the age of firms is very sensitive to the methods of estimation used, as well as the definitions of growth and size used.

Lee (2009) found a positive relationship between the size and profitability of firms operating in USA between the years of 1987-2006. Lee (2009) study employed fixed

effects panel data to analyse 7000 US public-held firms. Similarly, Stierwald (2009) studied the factors influencing the profitability of 960 big firms operating in Australia between the years of 1995-2005. The result of the study indicated that firm size affects firm profitability in a positive way. Wafula (2009) analysed drivers of return for quoted firms on the Nairobi stock exchange using book to market, cash flow ratio, dividend yield, firm size and profitability ratio as independent variables. The study found a weak positive relation between firm size and performance. Becker-Blease, Kaen, Eteban and Bauman (2010) examined the relationship between firm size and performance for firms operating in the manufacturing industry in the US for the period 2000-2009. The author's results concluded that performance has a negative correlation with the number of employees but is positively related to total assets and sales. Results in a study conducted by Khatab, Masood, Zaman, Saleem and Saeed (2011) on the relation between firm size and performance of 20 firms quoted on the Karachi Stock Exchange concluded a positive statistical relationship as well. The study looked at data for the period 2005-2009 and employed a regression analysis for the panel data used.

Vithessonthi and Tongurai (2015) studied the relationship between firm size and performance of firms in Thailand for the period 2007– 2009. A panel regression analysis was carried out using fixed and random effects models. The results indicated that firm size is positively related to performance. Gichura (2011) found that firm size is positively related to performance and additionally found that profit rate of a market is positively related to concentration ration. These findings are similar to those of Adams and Buckle (2000) who found that profit rate of a market is positively correlated with concentration ratio and negatively correlated to marginal concentration ratio.

Sangosanya (2011) employed a panel regression model for 45 manufacturing firms listed on the Nigerian Stock exchange to examine the effects of firm size on firm performance. Covering the period between the years 1989 to 2008 the study revealed that firm size positively impacts firm's performance. Burja (2011) employed a multiple regression analysis and used return on assets to measure performance and total sales to measure firm size. Her studies results revealed a strong relationship between firm size and market performance for companies in the Romanian chemical industry during the period between 1999 and 2009.

Akinlo (2012) studied the relationship between firm size and performance of 66 firms in Nigeria for the period 1999-2007, using the panel cointegration method. The results indicated a positive relationship between firm size and performance. Pervan and Viši (2012) evaluated the relationship between firm size and performance using data from 2,050 Croatian firms for the period 2002-2010. The study used a fixed effects panel data model and results indicated that size influences performance positively. Halil and Hasan (2012) carried out their study of the effect of firm size on performance for 143 Turkish manufacturing companies covering the period 2005-2011. Return on assets was used as a proxy for Performance, while total assets and total sales were used to measure firm size. The results indicated that firm size (total assets and total sales) positively impacts performance.

Memon, Bhutto and Abbas (2012) examined the impact of firm size on financial performance in textile sector of Pakistan, using 141 textile firms from 2004-2009. The study concluded that all the determinants of capital structure such as size, tangibility,

debt to equity ratio, amount of annual tax and growth of firm have a significant impact on firm's performance. Similarly, Kouser, Bano, Azeem and Hassan (2012) examined the relationships between firm size, growth, and profitability of 700 companies listed on the Karachi stock exchange, Pakistan, for the period 2001-2010. Employing panel data analysis, using total assets as a proxy for firm size, sustainable growth rate as a proxy for firm growth and return on assets as a measure of performance, the study concluded a positive relationship with the growth of the firm. Firm size resulted in negative impact on performance. By applying correlations and multiple regression analysis, a positive relationship between firm size and performance was concluded by Shubita and Alsawalhah (2012) who studied 39 listed Jordanian industrial companies during a six-year period (2004-2009) in Jordan. Akbas and Karaduman (2012) also found a positive relation between firm size and performance for firms operating in manufacturing sector, listed on the Islamabad stock exchange (ISE), Pakistan for the period from 2005 to 2011.

Dogan (2013) analysed the effect of firm size on performance for 200 companies listed on the Istanbul Stock Exchange (ISE) for the period 2008 - 2011. Employing multiple regression and correlation methods the study used return on assets as a proxy for performance and total assets, total sales and number of employees as proxies for firm size. The results indicated that there is a positive relationship between firm size and performance. However, the control variables (age and leverage ratio) also used in the study showed a negative relationship with return on assets, while liquidity ratio and return on assets resulted in positive relationship.

Employing a regression analysis, Mehari and Aemiro (2013) studied the relationship between firm size and performance of insurance companies in Ethiopia for the period 2005-2010. Return on total assets was used as an indicator of insurance company's performance (dependent variable) while age, size, liquidity, leverage and loss ratio were the studies independent variables. Mehari and Aemiro (2013) concluded that size, tangibility and leverage are positively related with firm returns. In the same year, Babalola (2013) analysed the relationship of firm size and performance of 60 manufacturing companies listed on the Nigerian Stock Exchange for the period 2000-2009. Employing a panel data model results indicated that firm size, for both independent variables: total assets and total sales, are positively related to performance of manufacturing companies in Nigeria.

Dahmash (2015) for the period 2005 – 2011, examined the relationship of firm size and profitability of 1538 firms listed on the Jordan Amman Security Exchange. Using a Panel data analysis (pooled estimator), the results indicated a positive relationship between firm size and profitability. Similarly, Danaei and Abdi (2015) examined the relationship between company growth measures and sustainability of capital structure and found a significant relationship between firm profitability and debit ratio for the period 2006-2011 for 101 companies listed on the Tehran Stock Exchange. The results further indicated that there is a relationship between growth opportunities of companies and their retained earnings ratio.

Kartikasari and Merianti (2016) studied the relationship of the size of a company and its profitability using 100 manufacturing companies listed on the Indonesia Stock Exchange

for the period 2009-2014. Debit-to-equity ratio was measure by leverage, firm size by total assets and total sales, while performance was measured by return on assets. Using panel data regression analysis and employing fixed effects models the study revealed that debit ratio positively effects performance. Total assets were found to have a negative impact on performance while total sales did not have a statistical effect on profitability.

Kumar (2016) conducted a study that examined the relationship between size and profitability in the Indian automobile industry for the period 1998 to 2014. Their analysis employed a linear regression model as well as a corresponding cross-sectional analysis. Kumar (2016) study concluded mixed results; the time-series analysis showed a positive relationship. However, the cross-section analysis performed showed that there is no relationship between firm size and profitability.

Olawale, Ilo and Lawal (2016) examined the effect of firm size on the performance of firms in Nigeria for the period 2005-2013. The study employed a pooled regression model, random effects model and fixed model to analyse the panel data. Total assets and total sales were used as proxies for firm size and return on equity was the proxy for performance. Olawale, Ilo and Lawal (2016) study reveal that firm size in terms of total assets has a negative effect on performance, while in terms of total sales, firm size has a positive effect on the performance of Nigerian non-financial companies. In a more recent study, Conway (2017) examined the relationship between capital invested, social responsibility scores, corporate financial performance, and risk in the U.S. mid-cap companies. Conway collected data from a sample of 365 large-cap companies, 279 mid-

cap companies, and 356 small-cap companies listed in the U.S. Standard & Poor's Stock Index. Conway (2017) concluded that there is a positive relationship between firm size and performance.

However, a negative relationship was found by Amato and Burson (2007), who tested the size-profit relationship for firms operating in the financial services sector, though the influence of firm size was not statistically significant. Amato and Burson (2007), employed a linear regression to test the data and further concluded that firm size factors such as total assets had a negative effect on performance. Ammar (2003) also found a negative relationship between firm size and profitability, for firms recording more than US\$50 million in sales. Hagedorn and Cloudt (2003), analysed the relationship between firm size and performance of 1,478 German manufacturing firms in 31 industries. Their results indicated a negative relationship between firm size and performance. In a more recent study by Olawale, Ilo and Lawal (2016) who employed total assets as one of his independent variables found that total assets (firm size) has a negative relationship with performance according to the fixed effects estimation used. Olawale, Ilo and Lawal (2017) used a panel data set of 12 non-financial firms operating in Nigeria for the period 2005-2013 and used a pooled regression model, fixed effects model and random effects model to examine the relationship between firm size and the performance.

Gibrat (1931) described that firm's growth is independent of its size. This finding is called "Law of Proportionate Effect" Bhattacharyya and Saxena (2009), which states that size and performance are unrelated. However, as Prasetyantoko and Parmono (2015) point out, many of these studies neglect the possible effects of other factors, such as market structure, entry barriers and firm strategies. This could explain the difference

in results reached by tests conducted in previous research projects and why large firms are seemingly out performing smaller firms. Another conceivable contention to legitimize the plausibility of a negative firm size and performance relationship is communicated in the concept of X-inefficiency. X-inefficiency is the degree to which costs are higher than required. While diseconomies of scale allude more to insufficiency in coordinating assets requirements to create more. X-inefficiency reasons that common administrative or technological wastefulness are high in bigger firms because higher generation costs which leads to performance rate declines.

Based on previous studies conducted it is difficult to predict the relationship between firm size and performance. The relationship between firm size and performance seem to be depended on other factors such as the industry a firm is operating in among other facts. Given this ambiguity, it appears judicious to observationally resolve, autonomously, the affliction between firm size and performance on a case-by-case premise and maintain a strategic distance from the inclination to generalize. The aforementioned subsequently justified a study of the relationship between firm size and market performance of investment management companies in Namibia.

2.2.1 Human capital model

The human capital model was developed by Doeringer and Piore (1970), in which incomes mirrors skill differentials in markets, has been for decades used to explain income brackets. Essentially, this has been utilized to clarify that relevant productive skills are partially a contributing factor to firm performance, for this reason most big firms elect able individuals compared to small firms. This model outlines that firm size

is positively correlated with profits and is consistent with competitive labour markets. According to Acemoglu and Autor (2012) Human capital is the stock of skills and knowledge that the labour force possesses of which the flow of these skills is forthcoming when the return to investment exceeds the cost. This stock of skills and knowledge is useful in a firm's production process hence it is directly part of the production function. It is therefore indicative that as a firm grows, it can draw in proficient specialists and create its human capital for better performance. The theory makes a positive correlation between size and performance as it indicates that large companies are in a better position to attract skilled labour which influences performance of a company.

2.2.2 Other factors affecting investment management performance

Empirical literature analyses how financial and nonfinancial factor such as market power, number of employees, management competence and total assets effect firm's performance (Salim, 2012). A large portion of investment management firm's income is influenced by interest rates, the economy the firm operates in, technological developments, wage cost, inflation and government policies.

2.3 CHAPTER SUMMARY

The reviewed literature looked at the impact that firm size has on market performance for firms operating in different industries and has indicated that the effect of firm size on performance can either be positive or negative depending on the context of the study (Serrasqueiro & Nunes 2008). This implies that conclusions drawn from one industry may not necessarily be the same for the next industry. Therefore, considering the

foregoing review of existing literature, a study looking at the impact that firm size has on market performance of investment management companies in Namibia is imperative for understanding what drives the financial subsector performance in Namibia. Additionally, a study of this nature is arguably the 1st in a Namibian context.

Employing a fixed effect model estimation which has been widely used in similar studies, the study uses assets under management and number of employees as the main independent variables of interest for firm size proxy. Capital invested, volume of sales and technology investment as independent control variables. This is because firm size remains a poorly defined concept, and empirical studies have tended to revert to proxies such as number of employees, total assets, sales, or market capitalisation (Trigueiros, 2000). Profitability measured by return on investment, was used as a proxy for performance, in line with the traditional theory of the firm, which is the backbone of the group of firm theories that consider that firms aim to maximise a single objective, which is profit (Pervan and Visic, 2012).

Refocusing the significance of firm size, Bhayani, (2010) argues that an interesting aspect of performance is that, much of it takes place through the growth of the size of existing organisations. As the notoriety of the impact firm size has on performance continues to rise, more attention on the real effects of firm structure and environments are being examined to identify factors that impact firm performance. One of the foremost well-known zones where the impact of firm size has been much questioned is the in the area of corporate finance. It would therefore not be wrong to say that firm size has been playing a major role in determining firm performance (Bhayani, 2010). For this

reason, examining factors that help explain firm performance is regarded as an important research theme. In this study, firm size is considered an important element in analysing Namibian investment management performance.

CHAPTER 3

RESEARCH METHODS

3.0 INTRODUCTION

This chapter outlines the research methods and details how the study's data was collected and analysed. The details are presented in the subsections as follows: research design, population, sample, research instruments, pilot study, research procedure, data analysis, research ethics and chapter summary.

3.1 RESEARCH DESIGN

The researcher began with the idea that there might be a relationship between firm size and financial performance. In order to analyse the relationship between firm size and market performance, this study used quantitative methods to collect data. This researcher employed return on investment as a proxy for firm performance. Furthermore, assets under management and number of employees (as the main variables of interest) were used as firm size proxies. Similarly, capital invested, volume of sales and technology investments were employed as independent control variables. The panel data for the period 2003-2017 was analysed using fixed effects model estimation. Data was ran in Eview software to establish the relationship between the variables. This study used fixed effects model estimation as it does not assure that all the sampled firms are the same in nature. According to Blackburne & Frank (2007) fixed effects models it takes out the element of generalizing that firms in the same industry are of the same in nature. Factors such as culture are elements that differentiate firms from one another. This study employed two equations to estimate the relationship of firm size to market performance,

as there were two variables of interest (as a measure of firm size) namely: assets under management and number of employees.

The fixed effect model estimation is denoted as follows:

Equation one (Eq.1) is where assets under management (AM) is the main variable of interest as a measure of firm size.

$$RI_{it} = \beta_1 AM_{it} + \beta_2 CI_{it} + \beta_3 TS_{it} + \beta_4 TI_{it} + a_i + \varepsilon_{it} \dots \dots \dots (Eq.1)$$

Where:

- RI_{it} is the dependent variable, where $i = 1, 2, 3, \dots, n$ represents cross-section firms and $t = 1, 2, 3, \dots, t$ is the time dimension from 2003-2017.
- AM_{it} is independent variable of interest of firm i at t time.
- β_1 is the beta coefficient of AU.
- CI_{it} , TS_{it} & TI_{it} are the independent control variable of firms i at t time.
- β_2 , β_3 & β_4 are the beta coefficients of CI, TS and TI respectively.
- a_i is the cross-section unit intercept for firm $i = 1, 2, 3, \dots, n$.
- ε_{it} is the error term of the equation.

Equation two (Eq.2) is where number of employees (NE) is the main variable of interest as a measure of firm size.

$$RI_{it} = \beta_1 NE_{it} + \beta_2 CI_{it} + \beta_3 TS_{it} + \beta_4 TI_{it} + a_i + \varepsilon_{it} \dots \dots \dots (Eq.2)$$

Where:

- RI_{it} is the dependent variable, where $i = 1, 2, 3, \dots, n$ represents cross-section firms and $t = 1, 2, 3, \dots, t$ is the time dimension from 2003-2017.
- NE_{it} is independent variable of interest of firm i at t time.
- β_1 is the beta coefficient of AU.
- CI_{it} , TS_{it} & TI_{it} are the independent control variable of firms i at t time.
- β_2 , β_3 & β_4 are the beta coefficients of CI, TS and TI respectively.
- a_i is the cross-section unit intercept for firm $i = 1, 2, 3, \dots, n$.
- ε_{it} is the error term of the equation.

The variable predicted was the dependent variable (performance). The variable used to predict the value of the dependent variable was the determinant of firm size.

Additionally, the fixed effects model estimation assisted in determining the overall fit (variance explained) of the model and the relative contribution of firm size to the total variance explained. Employing questionnaires to collect data allowed the researcher to gather data that was unavailable on the firm's websites. This study was a correlational study that examined the relationship between firm size and market performance of Namibia's investment management firms, with the intention to determine if and to what extent the variables are related.

3.1.1 Quantitative research approach

McCusker and Gunaydin (2015) defines quantitative research approach as one that includes numbers and measurable elements that can explain the relationship between the variables in a study. The quantitative approach aims to interpret findings and communicate facts as opposed to feelings and views. This study made use of secondary data obtained from websites of Namibian investment management firms. Questionnaires were used to complement secondary data collection in cases where facts were unavailable on secondary sources.

3.1.2 Methodological approaches

In a bid to establish the relationship between firm size and financial performance, it appears as if many researchers used quantitative techniques, see (Salim, 2012; Adeyemi & Asaolu, 2013). Interestingly in most of these studies, fixed effects model estimation were used. For example, Heshmati and Loof (2008) provided an empirical analysis of the two-way causal relationship between investment and performance indicators at firm level. Their performance variables included sales, value added, profit, cash flow, capital

structure and employment. The investment variables were research and development and physical capital. They then applied a multivariate vector autoregressive approach to a panel of Swedish firms which they observed between 1992 and 2000.

Likewise, Odhiong and Omolo (2015) conducted a study that sought to establish the effects of Human Capital Investment on Organisational Performance of Pharmaceutical Companies in Kenya. Odhiong and Omolo (2015)'s independent variables included training, education, knowledge management and skills development. They then used fixed effects model estimation to test their hypothesis. Similarly, Conway (2017) examined the relationship between capital invested, social responsibility scores, corporate financial performance, and risk in the U.S. mid-cap companies. Conway proposed two hypotheses. The first hypothesis was that firms with higher capital investment exhibit higher financial performance. The second hypothesis was that firms with higher capital investments exhibit low risk. The study used return on investment to measure the dependent variable - financial performance and used a weighted average cost of capital to measure risk leverage.

In a related study, Olawale, Ilo and Lawal (2016) used a pooled regression model that employed a fixed effects and random effects approach to identify the relationship between firm size and the performance of firms listed on the Nigeria Stock Exchange (NSE). In

Olawale, Ilo and Lawal's studies, return on equity was used as a dependent variable to measure performance, while total assets and total sales were used as independent variables.

In assessing the methods discussed above, it is not clear whether a finite number of independent variables could sufficiently explain the effects of firm size on performance. It seems reasonable to infer that there could exist many more other variables that could be used to model the relationship between firm size and financial performance. This last point is justified by findings from related studies that noticeably used different models. For example, Deesomsak, Paudyal and Pescetto (2004), Saliha and Abdessatar (2011) employed total assets as dependant variables, while Rajan and Zingales (1995), Serrasqueiro and Nunes (2008), Akba and Karaduman (2012), Shubita and Alsawalhah (2012) employed total sales as a dependent variable. Interestingly, Blease, Kaen, Etebari and Baumann (2010), Babalola (2013), Kartikasari and Merianti (2016), Kumar (2016) used total assets and total sales as dependant variables. From these findings, a key question emerges: Is it possible to explicitly deduce the relationship between firm size and financial performance after only analysing a limited number of variables? How much impact is lost by not considering all the other variables? The answers to these questions are not clear and as such could rather explain why many of these studies used independent variables to delineate their studies. However, regardless of which models the researchers took, in the majority of the cases, the relationship between firm size and financial performance has always been positive.

3.1.3 Other factors affecting investment management performance

Empirical literature analyses how financial and nonfinancial factor such as market power, number of employees, management competence and total assets effect firm's performance (Salim, 2012). A large portion of investment management firm's income is

influenced by interest rates, the economy the firm operates in, technological developments, wage cost, inflation and government policies.

3.2 POPULATION

The population of this study comprised of all the investment management firms registered by the Namibian Financial Institutions Supervisory Authority (NAMFISA). As at 31 December 2017, there were 26 registered investment managers (Namfisa, 2017). Therefore, the population of this study is 26 registered Namibian investment management firms. Between the years 2003-2017 the number of registered investment firms had grown from 9 firms to 26 registered firms. This denotes a 65% increase in the number of firms in the investment space.

3.3 SAMPLE (SAMPLING PROCEDURE)

This study employed a random sampling technique. All the elements in the population had an equal chance of being selected to form part of the study. Random sampling was used to select investment management firms that were surveyed. The selected firms were surveyed for a period ranging from 2003 to 2017. Given that average planning horizons for firms is 3 to 5 years, a 15-year sample period is considered a reasonable time to observe meaningful trends in firm's growth (Olawale, Ilo and Lawal, 2017). The study used the simple random technique to select 20 participants who constitute 77% of the population. The study by Babalola (2013) also used a 77% sample rule for the study he conducted. In line with the study by Sindere (2016), the sample is denoted by (n) and the population by (N). Sample size percentage = $(n/N) \times 100$ (sample size divided by total population and multiplied by 100). The sample of 20 firms constitutes 77% of the

population, mathematically expressed as: Sample percentage = $(20/26)100$.

The number two was randomly chosen as a starting point in the list of 26 firms, meaning that firm number two formed part of the sample and every 2nd firm after that was included until the sample size of 20 firm was reached. When last firm in the row was reached, the count from the 2nd firm would start at the top again. Thus, firms on the list represented by the following numbers made up the sample for this study: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 3, 7, 11, 15, 19, 23 and 1. Other previous researchers like Prasetyantoko and Parmono (2015) used the same sampling technique for the study they conducted.

3.4 RESEARCH INSTRUMENTS

The study made use of secondary data such as annual reports obtained from their websites or at times from their premises. Questionnaires were used to complement secondary data collection in cases where facts were unavailable from secondary sources.

3.4.1 Secondary Data

This study utilised science direct journals, annual reports, books, documents, annual financial reports and internet sources on the relationship between firm size and market performance. Reports and studies on the relationship between firm size and stock market performance, banks and fund managers from other emerging market economies were reviewed to compare the findings.

3.4.2 Questionnaires

Adams and Buckle (2000) stated that research questionnaires are a method of collecting information about the subject matter. They further argued that in order for questionnaires to be effective, the researcher should structure them in such a way that the questionnaire is easily explained, understood and completed by a respondent. Where information was available on firms' websites, a questionnaire was handed out to firms for data collection purposes. Questionnaires were self-administered, as it allowed for information to be collected and captured in a cost effective and short period of time. Questionnaires consisting of structured questions were deployed to all fund management firms that were surveyed.

Each firm received one questionnaire that was based on annual data figures of performance and size (assets under management, number of employees, capital invested, volume of sales and technology investment). Additionally, throughout this study, the researcher acknowledged that the use of questionnaires as argued by Lee (2009), is a method of data collection that can have several disadvantages. The author argues that the respondent may answer questions superficially, just to get it over and done with.

3.4.3 Instrument Validity and Reliability

Regarding validity, instruments used in this study were consistent with previous studies conducted and the supervisor's input was sought. Borsboom, Mellenbergh and van Heerden (2004) defines validity as an instrument used to measure the extent to which literature review supports the adequacy of interpretations and actions based on test scores. Similarly, Dent (2005) stated that validity is the degree of using a test and that

test measuring what it is supposed to measure. This study structured its quantitative data and information collection according to the objective of the study. Assets under management, number of employees, capital invested, volumes of sales and technology investment were used as a proxy to measure firm size and return on investment was used to measure firm performance. Information gathered through questionnaires and interviews was guided by the literature review and constructed according to the study objective. The aforementioned research practises were engaged to attain content validity.

According to Borsboom, Mellenbergh and van Heerden (2004) instrument reliability is concerned with consistency in measurement. This study ensured that a review was done to see the feasibility of the study and tested data that was collected in the pilot study. This allowed the researcher to compare consistency in the pilot study with other similar studies such of the study done by Olawale, Ilo and Lawal (2016).

3.5 PILOT STUDY

According to Vijayakumar and Tamizhselvan (2010) a pilot study is a study undertaken by a researcher prior to venturing into the actual study. This helps the researcher with determining if the study they intend to undertake is feasible. It assists in giving direction and helps identify areas that might need in-depth reading and improvement. The researcher of this study undertook a pilot study to determine if the study would be feasible and to test for reliability and validity of instruments. The pilot study consisted of 4 investment management firms. Data collected from the study was analysed and modifications according to the guidance of respondents were taken into consideration accordingly.

3.6 RESEARCH PROCEDURE

Secondary data was collected from websites of all key public and private organisations considered pertinent to this study. Additionally, science direct journals, articles and previous studies conducted were examined and duly acknowledged. Approval via lodging written requests (accompanied by an originally certified proof of registration from University of Namibia: Namibia Business School) for engagement with respective investment management companies was sought before any information was requested from respondents. Additionally, approval from the University of Namibia: Namibia Business School was sought. Before the study commenced, a pilot study was conducted to determine the feasibility of the study and to assist the researcher with direction and structure on how to conduct the study. The pilot study consisted of 4 investment management firms. According to Vijayakumar and Tamizhselvan (2010), a pilot study is imperative as it assists researchers with refining questions that are intended for the actual study. It additionally gives the study direction and structure. The pilot study was conducted over a 5-day period. Data collected from the study was analysed and modifications according to the guidance of respondents was taken into consideration accordingly.

3.7 DATA ANALYSIS

This section describes the procedures that the researcher used to analyse data for the research as guided by the research objective. Data analysis refers to the process of making sense of the information or evidence collected during the research (Ammar, 2003).

3.7.1 Quantitative Data Analysis

Quantitative data collected was analysed by using descriptive statistics in the form of tables of figures, charts and graphs. Additionally, inferential statistics in the form of correlation analysis was employed. In line with the study by Olawale, Ilo and Lawal (2016), a fixed effect model estimation was employed to test the research hypothesis. The fixed effects model estimation was done using the EViews software. To interpret the results, the individual coefficients was used and thereafter, the R-square was used to decide if the model as a whole was adequate to significantly predict the dependent variable. The chosen alpha or level of significance for this research was .05, based on the procedures and choices that Saunders, *et al.*, (2009) described as typical in scholarly research. Wherever the p-value was below the significance level ($\alpha = .05$), the null hypothesis was rejected.

Additionally, the fixed effects model estimation required to also validate and test the assumptions associated with the application of using fixed effects model estimation. According to Saunders, Lewis and Thornhill (2003), there are three assumptions applicable to fixed effects model:

1. Autocorrelation of residuals
2. Normality,

3.7.2 Autocorrelation of residuals

The autocorrelation of the residuals for this study was measured using the Durbin Watson statistics results. According to Anatolyev (2002), the Durbin Watson statistic is a number that tests for autocorrelation in the residuals and this statistic is always between 0 and 4.

3.7.3 Normality test

Fixed effects model estimation depends on the assumption that all variables used follow a normal distribution. According to Saunders, Lewis and Thornhill (2003), normality can be verified by inspecting the normal probability plot (P-P) of the regression standardised residuals. This study tested for normality by inspecting the normal probability F-statistic (P-value).

3.8 RESEARCH ETHICS

Research ethics as defined by Prasetyantoko and Paramono (2015) is an acceptable behaviour in social research science that does not allow a researcher to engage in unlawful practises such as plagiarism. It encourages researchers to acknowledge sources and clearly -expressing themselves. This implies that personal feelings should be kept separate from the study. In this study, ethical considerations were considered throughout the research process. The study objective was clearly explained to all the respondents before presentation of questionnaires. The process of gathering information from respondents was anonymous and confidential. It was additionally communicated to them that their participation was voluntary and that they would remain anonymous. All sources used in this study have been appropriately referenced and have not been passed as being work of the researcher. An ethical clearance was sought from the University of Namibia Research and Ethics Committee. Data gathered in this study will be kept in a lockable safe for five years and will be destroyed by shredding thereafter. Finally, this study was conducted and written solely by the researcher.

3.9 CHAPTER SUMMARY

This chapter highlighted the methodology of the study and detailed the types of instruments used to analyse the data. By employing quantitative methods, this study used a fixed effects model estimation to analyse the quantitative data. This chapter additionally highlighted the reliability and validity of the instruments and content employed to test the data. Additionally, this chapter highlighted information regarding the pilot test that was undertaken before the actual study was undertaken by the researcher. Finally, the chapter ended off by highlighting all ethical considerations that were observed in carrying out this study. The next chapter presents the results of this study.

CHAPTER 4

RESULTS AND DISCUSSION

4.0 INTRODUCTION

This chapter presents, discusses and analyses the estimated regression results from panel fixed effects models. First, the discussion begins with data analysis, description of the variables and the panel fixed effects model estimation, the estimation of the model and analysis of the results. Finally, it ends with a summary of the results.

4.1 DATA DESCRIPTION

This study examines the relationship between firm size and market performance using panel data set for 20 Namibian investment management companies for the period 2003-2017. The panel data is estimated using fixed effects model estimation to identify the relationship between firm size and the performance of Namibia's investment management firms. The study employs a quantitative method via secondary data gathered from firms' financials and questionnaires handed out to the sampled firms. The fixed effects model using cross section weights and white cross-section to measure the coefficient of variance, was employed to estimate the panel data collected in order to identify the relationship between the performance of investment management firms in Namibia and firm size, using the EViews software.

Performance which serves as the dependent variable was measured using return on investment as a proxy, while assets under management and number of employees were used as a proxy for firm size. Capital invested, total sales and technology investment

were employed as control variables. Previous studies such as Oladele and Adebayo (2013) and Babalola (2013) used similar independent variables in their studies. Additionally, performance measured by return on investment was similarly used by Dogan (2013). The model used in this study was a fixed effect model that is in line with Olawale, Ilo and Lawal (2016)'s study.

The study population consisted of all 26 firms registered with Namfisa for the year ended 2017, of which 20 investment management firms were used as a sample in this study. 20 cross sections are included, which amounted to 60 total panel (balanced) observations.

Table 1. Descriptions of variables used in the analysis

Variables	Description
Dependent Variable: Return on Investment (RI)	The ratio of operating profit divided by net assets.
Independent Variable (main variables of interest): Assets Under Management (AM)	Total assets under management
Number of employees (NE)	Total number of employees
Independent Variable (control variables): Capital Invested (CI)	Total capital invested
Total sales (TS)	Total sales
Technology Invested (TI)	Total technology invested

The two equations for the fixed effect model used in this study are denoted as follows:

Equation one (Eq.1) is where AM is the independent variable of interest as a proxy of firm size.

$$RI_{it} = \beta_1 AM_{it} + \beta_2 CI_{it} + \beta_3 TS_{it} + \beta_4 TI_{it} + a_i + \varepsilon_{it} \dots \dots \dots (Eq.1)$$

Where:

- RI_{it} is the dependent variable, where $i = 1, 2, 3, \dots, n$ represents cross-section firms and $t = 1, 2, 3, \dots, t$ is the time dimension from 2003-2017.
- AM_{it} is independent variable of interest of firm i at t time.
- β_1 is the beta coefficient of AM .
- CI_{it} , TS_{it} & TI_{it} are the independent control variable of firms i at t time.
- β_2 , β_3 & β_4 are the beta coefficients of CI , TS and TI respectively.
- a_i is the cross-section unit intercept for firm $i = 1, 2, 3, \dots, n$.
- ε_{it} is the error term of the equation.

Equation two (Eq.2) is where NE is the independent variable of interest as a proxy of firm size.

$$RI_{it} = \beta_1 NE_{it} + \beta_2 CI_{it} + \beta_3 TS_{it} + \beta_4 TI_{it} + a_i + \varepsilon_{it} \dots \dots \dots (Eq.2)$$

Where:

- RI_{it} is the dependent variable, where $i = 1, 2, 3, \dots, n$ represents cross-section firms and $t = 1, 2, 3, \dots, t$ is the time dimension from 2003-2017.
- NE_{it} is independent variable of interest of firm i at t time.
- β_1 is the beta coefficient of NE .
- CI_{it} , TS_{it} & TI_{it} are the independent control variable of firms i at t time.
- β_2 , β_3 & β_4 are the beta coefficients of CI , TS and TI respectively.
- a_i is the cross-section unit intercept for firm $i = 1, 2, 3, \dots, n$.
- ε_{it} is the error term of the equation.

4.2 AGGREGATED SURVEY RESULTS

In order to establish the relationship between return on investment and firm performance, the respondents were asked to indicate by filling in the appropriate column what their average return on investment for a three-year period ranging from 2003 to

2017 were. Given that average planning horizons for firms is 3 to 5 years, a 3-year period range over a 15-year sample period is considered a reasonable time to observe meaningful trends in a firm's growth (Vijayakumar and Tamizhselvan (2010). Information collected for the three-year period was divided by five to get the overall average of the period 2003-2017. The data was collected in aggregate as most firms were not listed firms and were not comfortable communicating their actual returns, hence information was collected over a 3-year period as indicated in appendix B. The questionnaire also solicited the respondents' data on five firm size factors namely: assets under management, number of employees, capital invested, volume of sales and technology investment. Table 2 below illustrates the results that emanated from this particular survey:

Table 2 Survey Responses

Firm	RI (%)	AM (N\$ million)	NE (number)	CI (N\$ million)	VS (N\$ million)	TI (N\$ million)
1	60	58	20	50	11	4
2	20	36	10	10	7	1
3	70	120	40	65	20	6
4	28	70	32	4	14	2
5	56	88	30	52	17	6
6	76	64	20	70	12	2
7	50	41	18	6	82	1.33
8	35	68	3	9	11	1
9	20	35	13	8	65	1.32
10	30	61.6	3	15	12.6	2
11	40	40	162	16	71	1.42
12	30	100	4	3	22	9
13	20	76	30	2	15	2
14	70	130	30	50	14.8	8
15	24	325	13	25	65	6
16	30	80	30	12	15	1
17	40	150	40	15	19	1
18	20	50	20	5	10	2
19	70	88	56	50	30	4
20	76	100	65	56	20	2

4.2.1 Panel Fixed Effects model results: with assets under management (AM) as measure of firm size.

The data from survey respondents in Table 2 were ran through E-View software using a fixed effect model and generated the results presented in table 3 below. Table 3 shows regression results from Eq.1 using assets under management as a measure for firm size.

Column 1 to 4 where obtained by running several regression.

Table 3 results from fixed effect model

	RI (model 1)	RI (model 2)	RI (model 3)	RI (model 4)
β_0 (intercept)	<i>7.94</i> ¹ (3.68) ²	<i>7.41</i> (3.44)	<i>12.27</i> (4.43)	<i>17.87</i> (4.59)

¹ Coefficient results

AM	0.08 (6.31)	0.10 (9.56)	0.16 (5.81)	0.27 (6.42)
CI	0.49 (18.23)	0.50 (18.64)	0.62 (21.04)	-
VS	0.41 (4.65)	0.53 (9.88)	-	-
TI	1.35 (4.63)	-	-	-
Adjusted R-square	0.98	0.98	0.98	0.97
Standard error	5.25	5.29	5.63	6.59
Prob F-Stat (P-value)	0.00	0.00	0.00	0.00
Durbin-Watson stat	2.79	2.91	2.81	2.82
Normal probability	0.07	0.07	0.05	0.05
Fixed Effect	Yes	Yes	Yes	Yes

The several regression ran found that the overall fitness of the model measured by the adjusted R-square was 97% and above for all 4 fixed effect model analysis. This meant that 97% and more of the variation in return on investment is explained by the independent variable assets under management (variable of interest as a proxy of firm size) and control variables capital investment, volume of sales and technology investment. An adjusted R-square of 97% and more can be considered to be a very good fit (Oladele and Adebayo, 2013). The probability F-statistic which test the hypothesis that all variable are zero mean do not help explain return on invest show that we reject the null hypothesis in favour of the alternative hypothesis. These show that variables help to explain the market performance.

² T-statistic results. Figures in brackets, bold are statistically significant at 5%.

4.2.2 Interpretation of results: table 3

The model's variable of interest is assets under management (AM) and has 3 control variables namely capital invested (CI), volume of sales (VS) and technology investment (TI). From table 3, model 1, had a positive intercept of 7.94 and assets under management (AU) had a positive coefficient of 0.08. Assume assets under management increase by N\$1 million, then return on investment will increase by 0.08 percent. This coefficient is statistically significant implying that assets under management as a measure of size has a statistical significant effect on market performance of firms in Namibia. In terms of the control variable capital investment, a positive coefficient of 0.49 was found indicating that an increase in capital investment caused a rise in return on investment. Assume capital investment is increased by N\$1 million, then return on investment will increase by 0.49 percent.

Moving on, volume of sales has a positive coefficient of 0.41 indicating that a rise in volume of sales causes a rise in return on investment. Assume a firm's volume of sales increases with N\$1 million, then return on investment will increase by **0.41** percent.

In terms of technology investment, the variable has a positive coefficient of 1.35 indicating that a rise in technology investment caused a rise in return on investment. Assume a Namibian investment firm increases its investment in technology with N\$1 million, then return on investment will increase by **1.35** percent. This indicates that technology investment could be used as a predictor of return on investment.

Does firm size explain market performance of investment management firms in Namibia? The results from table 3 shows that when we use assets under management as a measure of firm size, market performance is positively affected by size. Hypothesis 1 claims that there is no relationship between firm size and market performance of investment management firms, this means that the null hypothesis is that β_1 (assets under management as the main variable of interest) is equal to zero. However, from the results from table 3: model (1), the estimated value of β_1 is 0.08. Using the t-test with t-critical of 1.960 at alpha 0.05, with a t-statistic of 3.68, we reject the null hypothesis that claims that there is no relationship between assets under management and performance for Namibian investment management firms.

Similarly, for the all the control variables (capital investment, volume of sales and technology investment) under analysis 1, t-statistics are 18.23, 4.65 and 4.63 respectively. Therefore, at a 5% significant level with a t-critical of 1.960, we reject the null hypothesis that claims that there is no relationship between the control variables and market performance of investment management firms.

4.2.3 Panel Fixed Effects model results: with number of employees (NE) as measure of firm size.

Data from survey respondents in Table 2 were ran through E-View software using a fixed effect model and generated the results presented in table 4 below. Table 4 shows regression results from Eq.2 using number of employees as a measure for firm size.

Column 1 to 4 where obtained by running several regression.

Table 4 results from fixed effect model

	RI (model 1)	RI (model 2)	RI (model 3)	RI (model 4)
β_0 (intercept)	9.31 (6.80)	8.87 (4.34)	16.28 (15.37)	23.52 (6.49)
NE	0.06 (1.94)	0.18 (3.01)	0.17 (6.06)	0.55 (5.13)
CI	0.55 (21.67)	0.48 (30.67)	0.76 (46.10)	-
VS	0.42 (7.96)	0.57 (10.15)	-	-
TI	1.87 (4.80)	-	-	-
Adjusted R-square	0.98	0.98	0.98	0.97
Standard error	5.55	5.47	6.21	7.21
Prob F-Stat (P-value)	0.00	0.00	0.00	0.00
Durbin-Watson stat	2.72	2.70	2.51	2.42
Normal probability	0.07	0.08	0.07	0.06
Fixed Effect	Yes	Yes	Yes	Yes

Results indicated that the overall fitness of the model measured by the adjusted R-square is 97% and above for all 4 fixed effect model analysis. This means that 97% and more of the variation in return on investment is explained by the independent variable number of employees (variable of interest as a proxy of firm size) and control variables capital investment, volume of sales and technology investment. According to Oladele and Adebayo (2013) an R-square of 97% and more can be considered to be a very good fit.

4.2.4 Interpretation of results: table 4

The model's main variable of interest was number of employees (NE) and has 3 control variables namely capital invested (CI), volume of sales (VS) and technology investment (TI). From table 4, model 1, using the (Eq.2). The model has a positive intercept of 9.31

and number of employees has a positive coefficient of 0.06. Assume one extra person is employed, then return on investment will increase with 0.06 percent. In terms of the control variable capital investment, a positive coefficient of 0.55 was found indicating that an increase in capital investment caused a rise in return on investment. Assume capital investment is increased by N\$1 million, then return on investment will increase by 0.55 percent.

Moving on, volume of sales has a positive coefficient of 0.42 indicating that a rise in volume of sales causes a rise in return on investment. This indicates that an increase in volume of sales of a Namibian investment management firm by for example N\$1 million, increases return on investment by 0.42 percent. In terms of technology investment, the variable has a positive coefficient of 1.87 indicating that a rise in technology investment caused a rise in return on investment. This similarly implies that an increase in technology investment by for example N\$1 million increases return by 1.87 percent which indicates that technology investment could be used as a predictor of return on investment. Again, this is in line with what was discovered in the literature review.

The claim under hypothesis 2 is that there is no relationship between firm size and market performance of investment management firms, this means that the null hypothesis is that β_1 (number of employees as the main variable of interest) is equal to zero. However, from the given data from table 4 (analysis 1), the estimated value of β_1 is 0.06. Using the t-test with t-critical of 1.960 at alpha 0.05, with a t-statistic of 1.94, we accept the null hypothesis that claims that there is no statistical relationship between number of employees and performance for Namibians investment management firms.

All the control variables (capital investment, volume of sales and technology investment) under analysis 1, t-statistics are 21.67, 7.96 and 4.80 respectively. Therefore, at a 5% significant level with a t-critical of 1.960, we reject the null hypothesis that claims that there is no relationship between the control variables and market performance of investment management firms.

Hypothesis 3 claims that firm performance is not related to capital invested, which implies that the null hypothesis β_3 equates to zero. However, results from table 3 and 4 (model 1 test) that β_3 equals to 0.49 and 0.55 respectively. Using the t-test with t-critical of 1.960 at alpha 0.05, with a t-statistic of 18.23 and 21.67 respectively for model 1 test. We therefore reject the null hypothesis that claims that there is no relationship between capital invested and performance for Namibian investment management firms. Similarly, hypothesis 4 claims that firm performance is not dependent on volumes of sales and this implies that the null hypothesis β_4 equals to zero. However, results from table 3 and 4 (model 1 test) that β_4 equals to 0.41 and 0.42 respectively. Using the t-test with t-critical of 1.960 at alpha 0.05, with a t-statistic of 4.65 and 7.96 respectively for model 1 test. We therefore reject the null hypothesis that claims that there is no relationship between volume of sales and performance for Namibian investment management firms.

Similar to hypothesis 4 and 3, hypothesis 5 claims that firm performance is not dependent on investment in technology which implies that the null hypothesis β_5 equals to zero. However, results from table 3 and 4 (model 1 test) that β_5 equals to 1.35 and

1.87 respectively. Using the t-test with t-critical of 1.960 at alpha 0.05, with a t-statistic of 4.63 and 4.80 respectively for model 1 test. We therefore reject the null hypothesis that claims that there is no relationship between volume of sales and performance for Namibian investment management firms.

The autocorrelation of the residuals, the Durbin Watson statistics results from table 3 and 4 range from 2.42 – 2.91 for all 4-analysis done. According to Anatolyev (2002), the Durbin Watson statistic is a number that test for autocorrelation in the residuals and this statistic is always between 0 and 4. A results in this study fall between the range 2-3 implying that there is no autocorrelation in the sample. In regards to normality, this study's results in table 3 under analysis 1 and 2 indicated a 0.07 normal probability result which is bigger than alpha of 0.05. In this case we fail to reject the null hypothesis because we do not have enough evidence to conclude that this studies data does not follow a normal distribution. Results from table 4 in all the analysis (1 to 4) indicated a 0.06 result or more. At a 5% significant level we similarly fail to reject the null hypothesis which states that the data is normally distributed. The null hypothesis is accepted because we do not have enough evidence to conclude that this studies data does not follow a normal distribution.

4.3 DISCUSSION

Looking at table 3 in terms of assets under management (as the variable of interest), results for this study constantly generated a positive impact of assets under management on return on investment. Similarly, at a 5% significance level throughout the 4 model results, assets under management were statistically significant hence the null hypothesis

that claimed that firm size is not related to market performance of Namibian investment management firms was rejected. This finding is in agreement with what was earlier on established in the literature review (see Bauman and Kaen, 2003). The study further revealed that number of employees as a measure of firm size is a significant market performance attribute. However, looking at the contribution that technology brings about in today's business economies it is urged that firms focus on attaining and retaining competent employees as their contribution is of the essences in terms of strategy execution that leads to profitability. When looking at table 4 model 1 at a 5% significance level (table 4, analysis 1), the number of employees was found to be statistically insignificant. This again might be a mere issue of quality over quantity, implying that an increase in number of employees might have a marginal impact, though statistically it is insignificant if the quality aspect of human resource has not increased (Acemoglu and Autor, 2012).

As noted in the human capital model that was developed by Doeringer and Piore (1971), relevant productive skills are partially a contributing factor to firm performance and for this reason, most big firms elect able individuals compared to small firms. In support of the aforementioned, Goldin (2008) stated that human capital is a stock of knowledge and skills which is useful in a firm's productive process. So perhaps Namibian investment firms should focus also on investment in human capital in form of skills development and training. Noticeably, when the control variable, technology investment is removed from the analysis (table 4, model 2, 3 & 4), the number of employees becomes statistically significant at 5% significance level. The findings of the positive coefficient for number of employees on the impact of return on investment is in line with findings

from previous studies because it is commonly believed that investment in human resources can yield positive performance in organisations. The study by Perera and Thrikawala (2012) revealed that there is a significant relationship between investment in human capital and firm financial performances. Similarly, Shrader and Siegal (2007) indicated that human capital enhancement paves a way for greater innovativeness and this in turn offers positive implications on firm performance.

As such, firm performance and human capital could also be viewed in the context of high-performance work systems (Hsu, Lin, Lawler and Wu, 2007). The formation and emphasis on the human capital enhancement resulted in high performance or rather high-performance work systems. Admittedly, human capital development and enhancement in organisations tend to create a significant contribution on organisational competencies and this in turn becomes a great boost for further enhancing innovativeness and the current literature to a large extent supports the fact that firm performance is positively impacted by the presence of human capital practices (Shrader and Siegal, 2007). Some even endorsed that human capital development is a prerequisite to good financial performance (Delaney & Huselid, 1996). Evidence and this study results show that the relevance of human capital to firm performance has also become prevalent among the technology-based new ventures, and it seems that the use of human capital tool (emphasizing competent of employees) tends to have a great impact on the firms' success (Shrader & Siegel, 2007).

In terms of capital invested, this study found that capital invested had a positive impact on market performance of investment management firms in Namibia. This finding was constant throughout all the analysis done for both variables of interest as a proxy for

firm size. Similarly, this variable was constantly statically significant at a 5% throughout the analysis done for both variables of interest. The findings of this study concur with by Conway (2017). Capital invested helps further business activities and objectives, hence the more invested the bigger a firms capacity becomes to invest in resources that allows the firm to yield positive results (Shubita and Alsawalhah, 2012)

Moving on in this study, volume of sales had a positive coefficient for all analysis done. This indicated that an increase in volume of sales increased the return on investment. This implies that in the Namibian context there is a relationship between volumes of sales and performance of investment management companies. Similarly, volume of sales was statistically significant at 5% significant level throughout all the analysis done. This finding is similar to what was established in the literature review by authors such as Pervan and Visic (2012) who discovered that companies that had high volume of sales, performed better than those with less volume of sales.

In terms of technology investment, the variable in this study had a positive coefficient throughout the analysis done for both variables of interest. The analysis indicated that a rise in technology caused a rise in return on investment. This indicated that technology investment could be used as a predictor of return on investment. Again, this was in line with what was discovered in the literature review. Hoffman and Ford (2008) did an empirical investigation in a bid to examine how different levels of IT investment in the overall IT budget, along with the investment in IT personnel and IT outsourcing, related to firm-level performance in the health care industry. Hoffman and Ford (2008) discovered that increased IT expenditures led to increased financial performance in

health care firms. The theoretical and practical investigations already discussed above demonstrate the potential of the Information Systems to improve the organisation performances in terms of efficiency, productivity, and competitiveness and development. However, it can be argued that the best performances could be achieved when the IT investments are aligned with internal capabilities and organisational processes within the company's strategy. As such investment in IT could lead to improved financial performance. In summary, one can argue that Information Technology (IT) represents one of the most dynamic factors contributing to the technical progress in the design, process and supply of all categories of services in firms.

4.3.1 Discussing the results in the context of empirical framework: models and variables applied.

In investigating the effect of firm size on performance, it appears as if many authors used different models. For example, Olawale, Ilo and Lawal (2016) used a pooled regression model that employed a fixed effects and random effects approach to identify the relation-ship between firm size and the performance of firms listed on the Nigeria Stock Exchange (NSE). In Olawale, Ilo and Lawal's study, return on equity was used as a dependent variable to measure performance, while total assets and total sales were used as independent variables. In assessing Olawale, Ilo and Lawal's method, it is not clear whether the two independent variables could sufficiently explain the effect of firm size on performance. It seems reasonable to infer that there could exist many more other variables that could be used to model the relationship between firm size and financial performance. This last point is justified by findings from related studies that noticeably used different models. For example, Deesomsak, Paudyal and Pescetto (2004), Saliha

and Abdessatar (2011) employed total assets as dependant variables, while Serrasqueiro and Nunes (2008), Akba and Karaduman (2012), Shubita and Alsawalhah (2012) employed total sales as a dependent variable.

Interestingly, Blease, Kaen, Etebari and Baumann (2010), Oladele and Adebayo (2013), Babalola (2013), Kartikasari and Merianti (2016), Kumar (2016) used total assets and total sales as dependant variables. From these findings a key question emerges. Is it then possible to explicitly deduce the relationship between firm size and financial performance after only analysing a limited number of variables? How much impact is lost by not considering all the other variables? The answer to these questions is not clear and as such could possibly explain why many of these studies used independent variables to delineate their studies. But nevertheless, regardless of which models the researchers took, the relationship between firm size and financial performance has always been positive in the majority of cases.

4.3.2 Discussion of the results in the context of theoretical models

The results of this study appear to be in line with the various theoretical models. For example, the X-efficient and economic theories. By definition, the X-efficient theory postulates that increasing firm size enables incremental advantages such as leverage gains due to economies of scale and more so from attracting and retaining human capital for better performance. To support this, Chrystal and Lipsey (1997) stated that firm size allowed firms to practice oligopoly. As such by virtue of their size, firms were able to raise barriers of entry to potential entrants in certain markets, which further gave them an advantage in terms of performance. Additionally, high barriers to entry reduced

competition and gave existing firms potential to gain more market share. From these arguments it then appears as if large firms have the ability to implement mechanisms that enable them to generate high performance compared to small firms. However, authors like Amato and Wilder (1990) suggest that size is instead correlated to market power and that the more power a firm has the higher potential for x-inefficiencies which leads to low performance. On the other hand, authors like Barney (1991) suggest that firm performance is based on internal factors such as firm size, market share and level of management skills. All in all, it can therefore be concluded that since this research established a positive correlation between firm size and performance, then the results of this research are line with the x-inefficiency theory.

4.3.3 The theory of optimal firm size

To respond to the lack of consensus of the x-inefficiency theory that critics believe is its main weakness, the optimal firm size theory states that firm size is depended on a variety of variables which are related to the environment in which firm operates in. According to Pervan and Visic (2012) firms seek to behave in ways that are defined by the environment they operate in. Behaviour that signals a deviation from these environmental forces might lead to firms to being singled out which affects their growth. Hence firms in a specific environment adopt common approaches to business. The theory of optimal firm size additionally suggests that small firms grow until they reach an efficient scale of production. It suggests that firms with market power are prone to deviate from optimal cost of production, which affect their ability to reach optimal firm size. Hence a firm's ability to grow depends on innovation and the demand for its

products. This theory seems to speak to the results derived from the analysis done for this study in terms of technology investment, which was significant variable. Investment management space is a competitive space and market players who technology allows for continuous and high frequency trading are at an advantage in the market compared to others (Zook and Grote, 2017). It therefore is advisable that Namibian investment firms who are into dealing on the capital and forex market as oppose to those that manage GIPF funds for long term project investment purposes, should invest in technology that allow them to trade effective and efficiently.

4.5 CHAPTER SUMMARY

In conclusion, this chapter presented, analysed and discussed the results of the study. By employing a fixed effects of the least square dummy variable (LSDV) model, the study analysed panel data for the period 2003-2017. The results showed that firm size as measured by assets under management and number of employees (as the main variables of interest) and capital invested, total sales and technology had a positive impact on market performance of Namibian investment management firms. The chapter concluded by discussing the outcomes of the research within the context of various theoretical concepts. The next chapter presents the summary, conclusion, and recommendations for further research in this area of study.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.0 INTRODUCTION

This chapter highlights the conclusions of the study by stating the objectives achieved or not and gives recommendations. It goes on to give a brief summary of the study's methodology and finally gives suggestions for future researchers who may want to execute a similar study.

5.1 CONCLUSIONS

This part of chapter 5 highlights the conclusions based on the objective of the study which is to examine the effects of firm size on the performance of Namibia's investment management firms. Using return on investment to performance, assets under management and number of employees (as the main variables of interest) as a proxy for firm size and employing capital investment, volume of sales and technology investment as control variables.

Using a fixed effects of the least square dummy variable (LSDV) model to conclude on the panel data employed for the period 2003-2007, the study found that firm size has a positive effect on firm performance. The preferred analysis for both the firm size variable of interest is analysis 1 in table 3 and 4 respectively. The model had a positive intercept of 7.94 and 9.31 respectively, and assets under management had a positive coefficient of 0.08 and a t-statistic of 6.31 at a 5% level of significance, the null

hypothesis was rejected. This indicated that an increase in assets under management increased the return on investment. Similarly, the number of employees had a positive coefficient of 0.06 which indicated that a rise in human capital caused a rise in ROI. This indicated that the number of employees could be used as a predictor of return on investment. However, the number of employees had a t-statistic of 1.94 which was insignificant at a 5% significance level, hence the null hypothesis was accepted. This insignificance could be explained by factors embodied in the human capital model that emphasizes quality over quantity.

Capital invested had a positive coefficient of 0.49 and 0.55 respectively. This indicated that an increase in capital investment increased return on investment. This control variable additionally had a t-statistic of 18.23 and 21.67 respectively, denoting high statistical significance at 5% level of significance. Volume of sales had a positive coefficient of 0.41 and 0.42 respectively and was statistically significant at 5% level of significance, as its t-statistic 4.65 and 7.96 respectively. This indicated that an increase in volume of sales increased the return on investment. In terms of technology investment, the variable had a positive coefficient of 1.35 and 1.87 respectively, indicating that technology investment was a predictor of return on investment. Technology investment was additionally statistically significant at 5% significance level, as its t-statistic was 4.43 and 4.80, rejecting the null hypothesis.

In general, the findings from this study provided enough evidence to support the relationship between firm size and financial performance. Studies such as those by Conway (2017) stated that investment firms that have more high capital investments, assets under management, competent employees and technologies that allow them to be

effective and efficient, tend to perform better than those without. This study's findings provided support for this proposition. Investment firms are advised to consider implementation of measures so as to increase total assets under management, capital investment and volume of sales.

5.2 RECOMMENDATIONS

The study recommends that small firms in the industry increase their performance by increasing their assets under management. Additionally, an increase in capital investment through identifying the optimal debt and equity mix that fits their firm's strategy is recommended. New entrants to the market should strive to accumulate a substantial amount as capital investment as opposed to the bare minimum of N\$1 000 000 according to Namfisa requirements, as this is evidently counterproductive to performance and can affect firm survival and sustainability in the industry. With regards to human capital, firms should similarly employ capable human resources to drive the firm and suggest internal ways to grow the firm. Supporting staff such as the receptionist, accountants, research and development and cleaners should additionally not be taken for granted as they play a pivotal role in having each one focus on their respective tasks. A focused team leads to high productivity that in turn leads to increased sales. Technology investment is equally important as this improves the quality of firm productivity.

Policy makers are recommended to give greater importance on the need to create mechanisms that provide information to current small players and new entrants on ways

to improve performance in the market. Policy makers can additionally encourage firms to create capacity that will allow them to list their firms on the Namibian Stock Exchange for purposes of raising capital to accumulate more funds to manage. The Namibian financial sector is predominantly bank-based and it is important that policy maker's realise that banks in their nature are profit maximisers who hardly finance investment management firms and have high provisions for loan losses. This makes it difficult for current small market players and new entrants to get credit facilities as they fall outside the bank loan requirements and terms, which are normally high compared to stock market listing requirements.

5.3 SUGGESTIONS FOR FUTURE STUDIES

This study focused on the relationship between firm size and market performance of investment management firms in Namibia. Variables used to define firm size were assets under management and the number of employees. Control variables employed were capital invested, volume of sales and technology investment. Return on investment was used as a proxy for firm performance. It is suggested that another study that incorporates variables such as Market capitalisation growth or Return on Assets (ROA) as proxies of firm performance, and variables such as leverage, liquidity and solvability as firm-level controlling variables can be pursued. Additionally, a study that employs other variables such as interest rate, inflation and capital market development as controlling macro variables is suggested. This will help shed more light on the relationship of these variables and firm performance.

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APPENDIX A: ACKNOWLEDGMENT OF CONSENT

The research topic: Investigating the relationship between size and market performance of Namibia's investment management firms.

Dear Sir/Madam

REF: REQUEST FOR COMPLETION OF QUESTIONNAIRE

The above-captioned matter refers.

I hereby wish to formally lodge a request with your esteemed office and organisation, for your indulgence in completing the attached questionnaire.

My name is Margareth V. Shikuyele. I am a final-year MBA Finance student with the University of Namibia. I wish to obtain data to conduct research as part of the requirements of the MBA Finance program.

I hereby undertake that the data is required purely for academic research, and in keeping with the ethical requirements of such, will be stored for a period not exceeding five (5) years, after which it will be destroyed by shredding. Further, names of respondents (where provided) will NOT be disclosed or published under ANY circumstances.

Please do not hesitate to contact the undersigned for any further information and/or clarification regarding the above request.

Yours faithfully

Margareth V. Shikuyele
+264812350310 or +26461300432

APPENDIX B: QUESTIONNAIRE

Name (optional) _____

Position (Optional) _____

Question 1.

When was your company registered as an investment manager?

Question 2:

What was your company's average Return on Investment (ROI) for the following periods?

	2003-2005	2006-2008	2009-2011	2012-2014	2015-2017
	N\$	N\$	N\$	N\$	N\$
ROI					

Question 3.

Complete the following table relating to the company growth over the last 15 years.
Where data is unavailable, leave blank.

	Firm Size Indicators				
	Assets Under Management	Number of Employees	Capital Invested	Volume of Sales	Technology Investment
	N\$	N\$	N\$	N\$	N\$
2003-2005					
2006-2008					
2009-2011					
2012-2014					
2015-2017					

APPENDIX C: Language Editing Certificate

Language Editing Certificate - MARGARETH VAEFENI SHIKUYELE.pdf