AGGLOMERATION AND PERFORMANCE OF RETAIL MICRO-ENTERPRISES IN KENYA

BY

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DECLARATION

This research project is my original work and has not been submitted or published for the award of any degree in this or any other university.

……. ……

Albert Ogetto Mogire Date

D61/68091/2011

This research project has been submitted for examination with my approval as a University of Nairobi supervisor.

……. ……

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DEDICATION

I would like to dedicate this work to my family for their support during the period of study. I am extremely grateful to my wife, Eve Bosibori Ogetto, for her love, support, and encouragement. I also dedicate this work to my son, Mansa Mogire Ogetto.

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This work would not have been possible without provision from Almighty God and encouragement from many people. I would like to take the opportunity to express my gratitude to all of them.

I am very grateful to my supervisor, Mr. Tom Kong‘ere, for his valuable guidance and patience regarding the research. Also, sincere thanks to my moderator, Dr. Xavier Iraki, for his support.

I would like to highlight the contribution from the micro-enterprises that responded to the questionnaire. The research data they provided made this research possible.

ABSTRACT

The specific objectives of the project were to determine the relationship between agglomeration and performance of retail micro-enterprises, the drivers that lead to the agglomeration of retail micro-enterprises and the challenges encountered by retail micro-enterprises due to agglomeration. The data was collected by use of self-administered questionnaires and was analysed by descriptive analysis, correlation analysis and odds ratios to measure association between the exposures and the outcomes. The relationships established were between agglomeration, firm age, firm size, technology adoption and management skills versus profit and growth of the businesses. The odds ratios compared the performance outcomes based on respective baseline outcomes. The study revealed positive correlation in that agglomeration of retail micro-enterprises led to knowledge spill-over and heightened demand. Availability of support services and amenities and colocation of other similar competing businesses were highlighted as critical in choice of location by micro-enterprises. It was recommended that policies be implemented to create enabling environments for micro-enterprises based on agglomeration considerations.

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LIST OF ACRONYMS AND ABBREVIATIONS

BSC	Balanced Scorecard
CBD	Central Business District
CBS	Central Bureau of Statistics
CSPro	Census and Survey Processing System
EBIT	Earnings before Interest and Taxes
EPZ	Export Processing Zones
FGSMEs	Fast Growth Small-to-Medium Enterprises
FTZ	Free Trade Zones
GMS	Growth in Market Share
IRR	Internal Rate of Return
MEZOs	Micro-enterprise Zones
MSEs	Micro and Small Enterprises
NCF	Net Cash Flow
OR	Odds Ratio
PMS	Performance Measurement System
R&D	Research and Development
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
RPLAN	Actual Return Compared to Business Plan Return
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
TP	Technology Parks
USA	United States of America

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CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The small and medium enterprises (SMEs) sector has the largest share in employment especially in low-income countries and they generate the majority of new jobs (Ardic, Mylenko & Saltane, 2012). SMEs in Kenya contributed over 50 percent of new jobs in 2005 as noted by Bowen, Morara and Mureithi (2009) but three out of five SMEs fail within the first few months of operation.

Existing studies on SMEs have pointed out the cause of the high failure rate. In urban areas, observes the Central Bureau of Statistics (CBS) national baseline survey of 1999, 61.5 percent of the SMEs cited competition and lack of markets as the biggest challenge affecting them. Over a third of the entrepreneurs, 34.4 percent, claim the lack of transport as a challenge in their businesses. A shortage of raw materials is experienced by 50.6 percent of the SMEs and includes lack of and high cost of raw material. Lack of worksites, which includes unavailable, inadequate, or high rent business premises, is acknowledged by 77.7 percent of the enterprises as another challenge. Bowen et al. (2009) indicate that 42 percent of the SMEs cited location or accessibility as a factor that contributes to business success.

A suitable location can greatly enhance a company's market competitiveness with advantages such as increase in production capacity, additional profit, business expansion, better services to customers, increase in stockholder' wealth and cost reduction (Mazzarol & Choo, 2003). Location of a firm influences its productivity and so defines the firm's competitive advantage by enhancing productivity, innovation and formation of newer businesses (Porter, 2000). Good infrastructure at the business' location has the effect of

promoting competitive private sector growth by lowering the cost of doing business (Central Bureau of Statistics, 1999).

Firms can gain from agglomeration as suggested by Chung and Kalnins (2001) which refers to those external economies available to firms in large concentrations of economic activity that arise because large markets allow wider choice and greater range of specialized services. Governments around the world have established Special Economic Zones, Free Trade Zones (FTZ's), Export Processing Zones (EPZ's) and Technology Parks (TP's) in order to attract foreign investors (Welsh, Munoz & Deng, 2013) since there are merits in establishing micro-enterprise zones where micro-enterprise activities will be clustered and that challenges faced by micro-enterprises (including poor location, inadequate infrastructure and transport access, etc.) could be alleviated by zones.

1.1.1 Agglomeration

Agglomeration is the location of stores close to each other (Fox, Postrel & McLaughlin, 2007). Different types of stores that deal in different product lines commonly co-locate in shopping centers and malls and this is referred to as inter-type agglomeration. Also, stores of the same type dealing in a similar product line, such as restaurants, hotels, jewelers, furniture stores, and automobile dealerships, often locate close together and this is known as intra-type agglomeration (Fox et. al, 2007).

Firms may have an incentive to cluster together since consumers may be attracted to locations with a relatively large number of firms as clustering facilitates price comparison, lowers search costs and expected commodity price according to Dudey (1990). From a firms' perspective, moderate competition will encourage clustering together while intense competition in a cluster motivates firms to locate apart. Furthermore, Konishi (1999)

emphasizes that concentration of stores causes a market size effect where, due to taste uncertainty, customers are attracted by variety resulting in a higher chance of finding their favourite commodity. On the other hand, concentration of stores creates a price cutting effect leading to fierce price competition. The author shows that the market size effect is much stronger for small scale concentrations but the price cutting effect dominates for a large number of stores in the same location.

Chung et al. (2001) describes two types of gains from agglomeration: production enhancements and heightened demand. Flow of information between firms, aided by proximity, permits more firms access to leading techniques leading to production enhancement. Agglomeration causes heightened demand in industries where consumers need to personally inspect goods and also sellers can reduce consumers' search costs by spatially concentrating. Production enhancements can create better quality products, which will in turn heighten demand once consumers are aware of them.

This phenomenon of intra-type agglomeration has been theorized by the Nelson's Law of retail attraction (Blois, Mandhachitara & Smith, 2001) which states that "a given number of stores dealing in the same merchandise will do more business if they are located adjacent, or in proximity to each other than if they are widely scattered" (p. 477).

Retail concentration allows the development of public facilities, support services, and often increases the frequency of suppliers' visits, sometimes at lower costs (Esteban-Bravo, Múgica, & Vidal-Sanz, 2006). Once there is a cluster, there are reasons to expect its growth, as other stores may decide to locate there on the grounds of agglomeration externalities.

Agglomeration formats are most often characterized as either evolved retail format or as created retail format (Teller, 2008). Evolved retail format are retail clusters in central

business district or main shopping streets while created retail format includes shopping malls. The authors explain that evolved formats have lost their appeal as compared to created formats due to inherent shortcomings of poor car parking facilities, lack of shopping infrastructure e.g. toilets, traffic congestion and varying opening hours of tenants. Teller and Elms (2010) give generic attributes that lead to attractiveness of an agglomeration format as accessibility, parking conditions, shopping atmospheric stimuli, tenant mix of retail and non-retail offer, product range offered, merchandise value, sales personnel, arrangement of stores and infrastructural facilities.

1.1.2 Performance of Micro-enterprises

According to Porter (1998), clustering of firms leads to superior performance as clusters affect competition in three ways: first, by increasing productivity of companies based in the area; second, by driving the direction and pace of innovation, which underpins future productivity growth; and third, by stimulating the formation of new businesses, which expands and strengthens the cluster itself. Jaffe, Tratjenberg and Henderson (1993) show that agglomerated firms are more likely to cite each other's patents due to knowledge spill over.

Performance measures are defined as metrics employed to quantify the efficiency and/or effectiveness of actions (Tangen, 2003). The author notes that the criteria selection of performance measures is based on is debatable in academia and industry hence the reason most firms are reluctant to adopt new performance measures techniques. Also, the traditional financial and productivity measures have limitations such as absence of a link to company strategy and the risk of sub-optimisation. A firm's performance can be measured using the balanced scorecard (BSC) (Kaplan & Norton, 1992). The authors

explained that performance is measured in the financial perspective (returns on investment to shareholders), customers perspective (meeting customers' needs leading to referrals), innovation and learning perspective (improvement to create value), and internal business process perspective (efficiency in satisfying customers & making profits).

Performance can also be evaluated using a firm's growth, profitability, adaptability and customer satisfaction (Vorhies & Harker, 2000). Control variables such as firm age and size, should be incorporated in analysing firm performance as firm performance can be considered ambiguous (Murphy, Trailer & Hill, 1996). A large set of variables cause differences in firms' performance and includes firm-specific capabilities (like management skills, technology, age, firm size, etc.), the sector and institutional environment in which the firms operate (Masakure et. al., 2009). Further, urban micro-enterprises as opposed to rural counterparts can benefit due to locality (by benefiting from networking effects, better infrastructure and larger markets) and that there is a positive correlation between technology and enterprise profits.

1.1.3 Retail Micro-Enterprises in Nairobi, Kenya

Definition of SMEs varies from country to country. The European Union (2005) defines SMEs as firms with staffing between 1-249 employees wherein micro-enterprises are enterprises which employ 1-9 persons and whose annual turnover or annual balance sheet total does not exceed Kshs.231.4 million (2 million Euros). Micro-enterprises are also defined as having less than 10 employees and less than Kshs. 870,000 ($10,000) in assets (Azevedo, 2007).

Kihimbo, Ayako, Omoka, and Otuya (2012) indicate that taking into account capital, employment and output is theoretically the most appropriate to classify Kenya's enterprises

but due to lack of information, the SMEs definition is based on employment alone. Gray, Cooley and Lutabingwa (1996) have defined SMEs in Kenya wherein micro-enterprises have employment of 10 or fewer workers, small enterprises have from 11 to 50 workers, and medium enterprises have from 51 to 100 workers.

Micro-enterprises constitute street vendors, retailers, and traders that sell products or services to build income and expand assets (Welsh et al., 2013). The authors give characteristics of micro-enterprises as owner-operated business endeavours, engaged in diverse entrepreneurial activities, organized in several forms including sole-proprietorships, partnerships or family-owned, driven by flexible arrangements and seasonality as they have the ability to respond to market and customer demands in a timely fashion and require external support to flourish and thrive.

Masakure, Henson and Cranfield (2009) highlight that the official definition of micro-enterprises rarely considers micro-enterprises on their own but together with small enterprises. As in many developing countries, there is a scarcity of statistics on the micro and small enterprises (MSEs) sector in Kenya (Ronge, Ndirangu & Nyangito, 2002). As at 2002, there were about 1.3 million MSEs in Kenya employing an estimated 2.4 million people with over 99 percent of the MSEs employing only one person. Additionally, trade activities accounted for 64.1 percent of the activities of MSEs in Kenya. According to the authors, two thirds of the enterprises are located in rural areas but with higher densities in Nairobi and Mombasa. In 2003, SMEs in Kenya contributed 18% of the nation's Gross Domestic Product (Benzing & Chu, 2009). In the study on SMEs, Bowen et al., (2009) give data from Nairobi City Council licensing department showing that there are 69,067 small and medium trader shops and retail services in Nairobi. Nairobi Central Business

District (CBD) is enclosed by Uhuru Highway, Haille Selassie Avenue, Moi Avenue, and University Way. Data from Nairobi County Government indicates that there are 3,748 retail businesses in Nairobi CBD registered as at April 2015 shown in Appendix I.

1.2 Research Problem

Access to market opportunities is the most severe problem experienced by the trade, manufacturing and construction sectors as reported by the CBS 1999 national baseline survey in Kenya. The lack of space appears to be a major trade sub-sector problem. Kihimbo et al. (2012) researched in Kakamega on formal financing to address SMEs lack of operational capital where 90 percent of businesses that have sought formal financing have succeeded. However, the effects of credit on enterprise performance, including SMEs, are ambiguous (Masakure et al., 2009). Further, use of price to compete may mean lower profits even if it may translate to higher volumes and so, business success is a consequence of embracing the whole package of strategies in order to succeed as argued by Bowen et al. (2009) in a research on Kenyan SMEs.

The correlation between business location and consumers patronage has been studied in a University setting in Nigeria (Eze, Odigbo & Ufot, 2015). The study concludes that the agglomeration theory leading to improved performance is applicable in the African setting. However, performance has only been measured by considering repeat purchases and consumer patronage. This necessitates a study on the agglomeration effects on other performance measures on financial aspects and growth of the business.

On the study of agglomeration effects and performance of lodges in Texas, USA, selecting a hotel involves consumer search costs, because description of quality and services via guidebooks and by telephone may be inadequate (Chung et al., 2001). The heightened

demand externalities due to collocation made the lodging industry to be chosen since in such a setting demand gains are likely to arise. Further, the author focuses on agglomeration demand gains since they have been less studied by organization scholars. In Alcácer (2006) study on producers and sellers of cellular handsets, the author notes most studies have been on service industries where different activities in the value chain are performed in the same location. Others have focused on production, a single activity of the value chain (Shaver et al., 2000). The author gives a divergent view that the sales part of the value chain is most likely to be dispersed as sales activities benefit the least from agglomeration economies and are most susceptible to competitive pressures. These observations raise the question whether the sales or retail activity part of the value chain benefits from heightened demand due to agglomeration in Kenya.

Blois et al. (2001) conducted a study in Bangkok to assess a shopping centre dealing with computer accessories and had 299 retail outlets. The store had positive externalities that include access to a large and growing customer base plus the knowledge that suppliers give stores in the centre priority in the provision of new stock. The author finds the shopping centre's existence and large number of stores unusual and concludes that it raises questions about our understanding of the factors leading to agglomeration. The authors' findings challenge us to investigate factors that lead similar Kenyan enterprises to agglomerate. Based on the results from China that micro-enterprise zones (MEZOs) could lessen or alleviate many of micro-enterprise challenges (Welsh et al., 2013), more research be conducted in countries with high unemployment rate and high incidence of poverty. Retail concentration counters challenges of increased competition and low sales and provision of better infrastructure (Esteban-Bravo et al., 2006; Konishi, 1999). From these suggestions,

there was need to research on the relation between collocation and the performance of retail enterprises in Kenya.

The research questions for this study in Kenya were, therefore;

1) How did agglomeration relate to the performance of retail micro-enterprises?

2) What drivers led to the formation of agglomeration of micro-enterprises?

3) What challenges were encountered by retail micro-enterprises due to agglomeration?

1.3 Research Objectives

The specific objectives of the research were to determine:

1) The relationship between agglomeration and performance of retail micro-enterprises.

2) The drivers that led to the formation of agglomeration of retail micro-enterprises

3) The challenges encountered by retail micro-enterprises due to agglomeration.

1.4 Value of the Study

County governments can use the information to develop policies in planning and location of similar businesses to improve their performance e.g. by subsidizing land rates for zoned areas, branding or facilitating support services and amenities like parking spaces. Knowledge can be extended to establishment of special economic zones, industrial parks and technology cities that host similar and competing enterprises e.g. Konza Technopolis City in Kenya. The results of the research can be adopted by firms locating into an agglomerated environment to figure out the economic potential of a retail business in the area, reducing business start-up risks. Additionally, academicians can conduct research and expound on agglomeration on other business sectors like manufacturing in Kenya.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews research studies and prior related information related to agglomeration of retail enterprises and its relation to performance. The first section describes the formation and existence of agglomerated firms and retail homogeneous clusters. The second section highlights the performance and performance measures of SMEs. Finally, the third section describes the relation between agglomeration, competition and performance of firms.

2.2 Agglomeration

Store location is a retailer's most costly and long-term marketing-mix decision and from the retailer's point of view, proximity to consumers means proximity to other stores (Fox, Postrel & McLaughlin, 2007). The authors define that this phenomenon where stores are located in proximity to one another is known as agglomeration which can further be split into inter-type and intra-type agglomeration. Inter-type agglomeration involves co-location of different types of stores that deal in different product lines. Intra-type agglomeration involves stores of the same type dealing in a similar product line (Fox et. al, 2007).

Miller, Reardon and McCorkle (1999) suggested that net gains/losses from agglomeration depend on the balance of two countervailing forces defined as symbiosis and darwinism. Symbiosis captures the incremental attractiveness of stores located close together compared to the attractiveness of those same stores individually. The second force was referred to as darwinism and reflects competition for consumer purchases among stores. The balance of these two forces can result in either a positive, neutral or negative effect of agglomeration on retailer performance.

2.3 Agglomeration of Firms

The classical economist Alfred Marshall's theories answer the question why many firms agglomerate. Marshall suggested that locations concentrated with similar activity generate valuable agglomeration economies for firms, namely better access to skilled labour (labour market pooling), specialized suppliers (shared inputs), and knowledge spill over from competing firms (Potter & Watts, 2014).

Non (2010) analysed a market that deals with homogenous goods and noted that mall shops attract more non-shoppers per shop than isolated shops and therefore an incentive for isolated shops to join a mall. The cause of this behaviour was because of search costs where non-shoppers incur costs when entering a shop and on top of that, they incur travel costs when travelling between shops that are not in the same mall.

A different argument is presented by Shaver and Flyer (2000) that asymmetry in returns to agglomeration will lead to adverse selection with respect to which firms cluster. In case of heterogeneous firms, firms with the best technologies, human capital, training programs, suppliers, or distributors will minimally benefit from access to competitors' resources and so, the relatively large entries are less likely to agglomerate and locate at a distant from the weaker firm. In a study on the location choices across the value chain, Alcácer (2006) poses the questions whether firms' collocation patterns vary by firm activity and why firms react differently to competition and agglomeration forces to understand how firms locate. The author concludes that research and development (R&D) and production activities are more likely to be collocated as they are less likely to be affected by competition. Sales activities are dispersed they benefit the least from agglomeration economies and are most susceptible to competitive pressures.

Firms can also avoid locating close to each other. When an isolated shop joins a mall, the mall size increases but consequently the number of non-shoppers per mall shop decreases and therefore, dampening the effect of malls attraction to non-shoppers (Non, 2010). Also, isolated shops can set a slightly higher maximum price than mall-shops giving a mall-shop an incentive to leave the mall. Convenience retailers selling goods of low unit value or that are in constant demand avoid each other's company, though according to another of Nelson's maxims, " the rule of retail compatibility", they often seek locations adjacent to sellers of related but dissimilar wares (Brown, 1987). Examples are greengrocers and butchers, bookmakers and public houses.

Agglomeration exists in a variety of locations in the United States of America (USA) such as Hollywood's entertainment, Silicon Valley's microelectronics, Boston's mutual funds, Detroit's auto parts and New York's financial services clusters (Porter, 1998).

2.4 Retail agglomeration

Retail agglomeration includes both the heterogeneous and homogeneous clustering of retailers and is based on both central place theory and the principle of minimum differentiation respectively (Findlay & Sparks, 2002).

These forces that lead to homogeneous agglomeration are customer-side forces and supply-side forces (Krider & Putler, 2013). Customer forces include comparison shopping motivated by customer purchase risk, customer taste heterogeneity, customer expectations of lower prices, increased customer awareness of homogeneous clusters, shopping for entertainment. Supply-side forces include shared infrastructure, localized resources, and efficiencies in firm resource utilization, reduced location choice risk and follower's traffic interceptor strategy.

Firms spatially differentiate to avoid price competition and increase market coverage, which becomes more important if travel costs are convex and demand is elastic (Krider et. al, 2013).

2.5 Performance Measurement

Moulin (2007) defines performance as evaluating how well organisations are managed and the value they deliver for customers and other stakeholders. What is performance measurement? According to Neely et al. (1995), performance measurement can be defined as the process of quantifying the efficiency and effectiveness of action. A performance measurement system (PMS) has been defined as the set of metrics used to quantify both the efficiency and effectiveness of actions by Neely et al. (1995). Bourne et al. (2003) have pointed out that performance measurement refers to a multidimensional set of financial and non-financial measures, internal and external measures of performance and measures quantifying what have been achieved as well as measures that help to predict the future.

By early 1980s, given the increased complexity of organizations and the markets in which they compete, it was no longer appropriate to use financial measures as the sole criteria for assessing success (Kennerley & Neely, 2002). Johnson and Kaplan (1987) highlighted the failure of financial performance measures to reflect changes in the competitive circumstances and strategies of modern organisations. As a result, many frameworks, such as the Balanced Scorecard, have been proposed and their objective is to help organisations define a set of measures that reflects firms' objectives and assesses their performance appropriately (Kennerley et al., 2002).

There is a clear maturity of performance measurement literature for large firms in comparison with SMEs according to Taticchi et al. (2009). At the beginning of 2000s the

research on performance measurement in regards to SMEs took two directions: first one was application of the models initially purposed for large companies such as BSC; and the second was development of more specific models for SMEs.

Some scholars believe these models are applicable (Jungman et al. 2004) while others are to the contrary that SMEs present some distinctive characteristics that differentiate them from large enterprises and so, their needs in terms of performance measurement processes and tools are different from those of larger companies (Cocca & Alberti, 2010). Some authors who have assessed the implementation of the BSC in SMEs conclude that this model is not suitable for SMEs (Garengo et al., 2005). This is because small and large firm are fundamentally different from each other in terms of uncertainty, innovation and evolution.

With reference to performance measurement, SMEs are still relying mainly on accountancy information and finance al measurement (Carpinetti et al., 2008; Jarvis et al., 2000); focus on technical aspects and production (Hong and Jeong, 2006) usually leads SMEs to a misconception about performance measurement, with firms citing lack of time available for non-operational activities (Garengo et al., 2005). According to Hudson et al., (2001) research has demonstrated that the use of performance measures in SMEs is limited. Financial measures, which are required for examination by external stakeholders, are generally well developed but operational measures are typically ad hoc and lack formal structure.

On a study of fast growth small-to-medium enterprises (FGSMEs), Tan and Smyrnios (2009) indicate that fast-growth enterprises measure performance from financial, internal business, innovation and learning, and customer perspectives, in line with the balanced

score card (BSC) method. FGSMEs measure performance utilizing financial information such as cash flow, balance sheets, and profit and loss statements. FGSMEs also utilize measures of customer satisfaction, attainment of industry awards, and receipt of client reports, website popularity, objective employee performance indices, and staff retention.

Performance can also be evaluated using a firm's growth, profitability, adaptability and customer satisfaction (Vorhies & Harker, 2000). Following Murphy, Trailer, and Hill (1996) research on the performance dimensions and measures, Wu (2009) reviewed thirty five published papers (from year 1997 to 2006) focusing on empirical study of SME performance. Growth and profitability were found to be the two performance dimensions most frequently used in the empirical research. Efficiency as a dimension had the measures Return on Assets (ROA), the Internal Rate of Return (IRR), Return on Investment (ROI), Earnings before Interest and Taxes (EBIT) and Return on Equity (ROE). Growth as a dimension had the measures growth in sales, acquiring capital on a timely basis, change in employees, assets growth, Growth in Market Share (GMS), the change in return on sales, new product/process development, profitability growth, market development, increase in available capital, the growth of margins and revenues growth. Profit as a dimension had the measures net profit, stock market returns, return on sales, profitability relative to competitors and net profit margin. Size/liquidity as a dimension had the measures number of employees, Net Cash Flow (NCF), gross revenues, cash flow relative to competitors and sales share. Other performance dimensions were the number of patents applied, customer satisfaction, operating efficiency and financial stability.

2.6 Agglomeration and Performance

According to Porter (1998), modern competition depends on productivity, not on access to

inputs or the scale of individual enterprises. The author notes that clusters promote both competition and cooperation (much of it vertical). The success of SMEs is dependent not only on a combination of marketing behaviour and entrepreneurial behaviour but also on collaboration, co-operation and alliances involving, for example, complementary activities (Kocak and Edwards, 2005). The clusters of small firms create a dynamic system of economic activity characterised by local specialisation and flexible production.

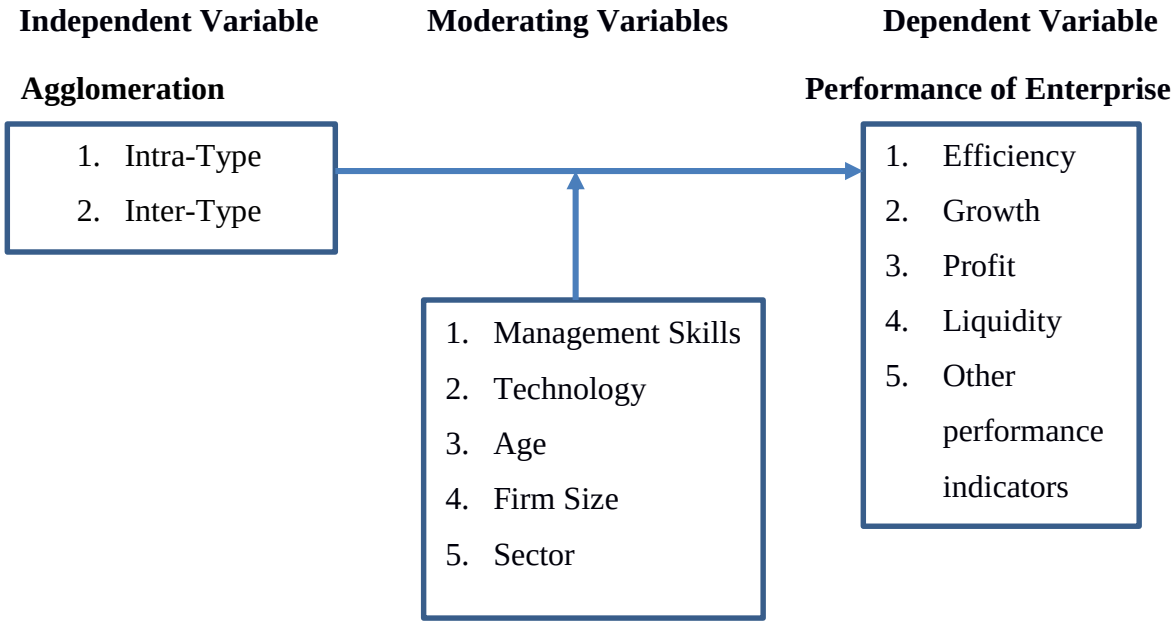
Bigsten, Gebreeyesus, Siba and Söderbom (2011) investigate the impact of agglomeration on physical productivity and output price in the Ethiopian manufacturing sector. The authors find a negative and statistically significant effect of agglomeration on prices, suggesting that new entry leads to higher competitive pressure in the local economy. This is positive for consumer welfare but negative for enterprise profitability. Competition reduces the maximum price cut off firms can charge, and this forces high cost firms to exit the market. However, they found a positive and statistically significant effect of agglomeration on physical productivity. The authors note that the productivity and price effects on enterprise revenues mostly cancel each other out.

Shaver and Flyer (2000) expound that the positive externalities which includes knowledge spillovers and industry demand for both specialized labour and specialized input providers, can enhance performance of firms that agglomerate. Freeman, Styles and Lawley (2012) study the level of domestic competitive rivalry, access to networks and the level of infrastructure or services as key location effects that impact on SMEs ability to develop resources and capabilities, and therefore export performance. The authors suggest that there is a positive correlation between firms located inside industrial districts with export performance even though there is competitive rivalry. The author opines that there is

growing evidence that few firms, specifically SMEs, can innovate in isolation without engaging in cooperative activities. Bell (2005) states that firms in the cluster are more innovative than others due to benefits from agglomeration economies which includes nearby suppliers attaining efficient scale, direct observation of competitors and ability to exploit collective knowledge.

2.7 Conceptual Framework

The research is guided by the following framework.



Source: Own Compilation 2015

Figure 1: Relationship between the variables.

The independent variable is the factor which influences the performance of a micro-enterprise. Agglomeration can impact the performance of the firm (dependent variable). Moderating variables include firm specific capabilities (management skill, technology, age and firm size) and the sector the firm operates in which moderate the performance of a retail micro-enterprise.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter described the methodology that was used in conducting the study. It included the research design, target population, sample design, data collection research instruments, the research process, validity and reliability of the research instruments and finally data processing and analysis techniques.

3.2 Research design

Descriptive research design was used to study the performance of retail micro-enterprises in relation to agglomeration. Description seeks to answer the "what" questions (Shields and Rangarajan, 2013) as posed by the research questions. Also, the major purpose of descriptive research design is a description of the state of affairs as it exists at present (Kothari, 2003).

3.3 Population

For this study, the target population were enterprises in Nairobi CBD. The streets targeted were those with registered retail businesses as per Nairobi County government. The retail businesses targeted numbered 3,748 in their respective streets as shown in Appendix I and thus were representative of most enterprises in the retail sector specifically within Nairobi and Kenya in general. Criteria for the targeted participants included micro-enterprises which employed 1-9 persons.

3.4 Sampling Technique and Sample Size

This study used stratified random sampling technique. A stratified random sample is one obtained by separating the population elements into non-overlapping groups, called strata, and then selecting a simple random sample from each stratum (World Bank, 2015). This

method is preferred since unbiased estimate for strata can be obtained, final total sample includes establishments from all sectors and lower cost per observation. Stratified sampling also has a smaller error on estimation as compared to simple random sampling.

Stratification of sample was based on the street the firm operated in (World Bank, 2015). The sample size was chosen using the Taro Yamani's formula for known populations shown below (Eze et. al., 2015):

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = sample size, N= size of population, e = margin error. The margin of error varies between 5 % and 10 % (Ekise, Nahayo, Rono, Twahirwa, 2013) and so this study adopted the margin error of 10 %, the confidence level of 95 %, probability of success p=0.5. This gave the sample size as 98 retail enterprises spread across the stratified streets as shown in Appendix I Section II. As a rule of thumb, Sekaran and Bougie (2010) recommends that a sample size of between 30 and 500 is appropriate for most research.

3.5 Data collection

Descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection (Glass & Hopkins, 1984). Descriptive studies are aimed at finding out "what is," so observational and survey methods are frequently used to collect descriptive data (Borg & Gall, 1989). The study used questionnaires and observation as the main tools for collecting data. Both the open-ended and closed-ended type of questionnaires were adopted. The questionnaires were administered by the researcher to the founders or managers of the businesses. Direct observation method was used to capture the most useful information regarding the location

and organization of the micro-enterprises in the selected areas.

The study used quantitative methods of data collection by interviewing selected respondents with the aid of a structured questionnaire. The questionnaire sought to capture information to help in achieving the set objectives. Questionnaires were administered by use of drop and pick or email to micro-enterprise owners or managers.

3.6 Data Analysis

Primary data was captured using Census and Survey Processing System, CSPro and processed using Statistical Package for Social Sciences (SPSS) and Microsoft Excel. The data gathered was analysed and presented using descriptive statistics. Section I and II of the questionnaire were the business and enterprise profiles and showed the moderating variables to the performance of the micro-enterprise. Section III Part 1 highlighted the degree of agglomeration that indicated whether inter-type or intra-type, drivers leading to agglomeration, externalities of agglomeration and challenges facing micro-enterprises due to agglomeration. From the questionnaire's Section III Part 2, analysis of the data showing first year's firm performance vis-à-vis last year's firm performance indicated the performance of the firms based on the performance measures and indices.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

This chapter details the findings and analysis of the primary data that was gathered from the respondents of the study. A questionnaire was used to collect data from the 98 respondents. Feedback was gathered from the 98 respondents being 100% response on the entire sample size. Descriptive data on characteristics of SMEs were analysed using odds ratios. Descriptive and correlation analysis was also carried out on relationship between agglomeration and performance, drivers and challenges on micro-enterprises due to agglomeration.

4.2 Business Profile of the Respondents

The business characteristics of the respondents analysed included the street the business is located, industry/sector the firm is operating in, the legal nature of the business, number of employees, annual revenue, total asset value, years in operation, employee training and technology adoption.

Table 4.1 Street business located

Street business located	Frequency	Percent	Valid Percent	Cumulative Percent
Kigali Road	5	5.1	5.1	5.1
Moi Avenue	34	34.7	34.7	39.8
Tubman Road	3	3.1	3.1	42.9
Biashara Street	6	6.1	6.1	49.0
Moktar Daddah Street	5	5.1	5.1	54.1
Banda Street	1	1.0	1.0	55.1
Aga Khan Walk	1	1.0	1.0	56.1
Muindi Mbingu Street	6	6.1	6.1	62.2
Taifa Road	1	1.0	1.0	63.3
Utalii Street	1	1.0	1.0	64.3

Table 4.1 Street business located

Street business located	Frequency	Percent	Valid Percent	Cumulative Percent
Loita Street	1	1.0	1.0	65.3
Kenyatta Avenue	4	4.1	4.1	69.4
Monrovia Street	2	2.0	2.0	71.4
University Way	1	1.0	1.0	72.4
Wabera Street	1	1.0	1.0	73.5
Kimathi Street	4	4.1	4.1	77.6
Koinange Street	5	5.1	5.1	82.7
Parliament Road	1	1.0	1.0	83.7
Haile Sellassie Avenue	4	4.1	4.1	87.8
Mama Ngina Street	3	3.1	3.1	90.8
Standard Street	3	3.1	3.1	93.9
Kaunda Street	2	2.0	2.0	95.9
Harambee Avenue	4	4.1	4.1	100.0
Total	98	100.0	100.0	

Source: Research Data

From Table 4.1, 98 respondents gave feedback regarding the item, which showed the streets they were located and the valid percentages with the majority being 34 respondents in Moi Avenue representing 34.7 per cent of the total respondents.

Table 4.2 Sector

Item	Category	Frequency	Percent	Valid Percent	Cumulative Percent
Product sold	Clothing	43	43.9	43.9	43.9
	Mobile Phones	12	12.2	12.2	56.1
	Electronics	12	12.2	12.2	68.4
	Beauty and Personal Care	10	10.2	10.2	78.6
	Computer Games and Movies	3	3.1	3.1	81.6
	Garments	1	1.0	1.0	82.7
	Photocopiers	1	1.0	1.0	83.7
	ICT products	2	2.0	2.0	85.7
	Footwear	6	6.1	6.1	91.8
	Chemist	1	1.0	1.0	92.9
	Bakery	1	1.0	1.0	93.9
	Stationery	5	5.1	5.1	99.0
	Curio	1	1.0	1.0	100.0
	Total	98	100.0	100.0	

Source: Research Data

From Table 4.2, 98 respondents gave feedback regarding the item, which showed the sector involved in indicated by the product sold and the valid percentages. The majority were 43 respondents in clothing sector representing 43.9 per cent of the total respondents.

Table 4.3 Legal Nature of business entity

Item	Category	Frequency	Percent	Valid Percent	Cumulative Percent
Legal Nature of business entity	Sole Proprietorship	57	58.2	59.4	59.4
	Partnership	20	20.4	20.8	80.2
	Limited Company	19	19.4	19.8	100.0
	Total	96	98.0	100.0	
	Missing	2	2.0		
	Total	98	100.0		

Source: Research Data

From Table 4.3, out of 98 respondents, 96 respondents gave feedback regarding the item, which showed the legal nature of the business entity and the valid percentages. The majority were 57 respondents in clothing sector representing 59.4 per cent of the total respondents.

Table 4.4 Firm Size

Item	Category	Frequency	Percent	Valid Percent	Cumulative Percent
Number of Employees	1 -3	67	68.4	68.4	68.4
	4 - 6	22	22.4	22.4	90.8
	7 - 9	3	3.1	3.1	93.9
	10 - 49	5	5.1	5.1	99.0
	More than 49	1	1.0	1.0	100.0
	Total	98	100.0	100.0	
Annual Revenue in Kshs.	Less than 100,000	6	6.1	6.3	6.3
	100,000 – 499,000	24	24.5	25.0	31.3
	500,000 - 999,999	39	39.8	40.6	71.9

Table 4.4 Firm Size

Item	Category	Frequency	Percent	Valid Percent	Cumulative Percent
	1,000,000 – 49,999,999	26	26.5	27.1	99.0
	More than 231,000,000	1	1.0	1.0	100.0
	Total	96	98.0	100.0	
	Missing	2	2.0		
	Total	98	100.0		
Total asset value in Kshs.	Less than 100,000	2	2.0	2.1	2.1
	100,000 – 499,000	19	19.4	20.0	22.1
	500,000 - 870,000	32	32.7	33.7	55.8
	More than 870,000	42	42.9	44.2	100.0
	Total	95	96.9	100.0	
	Missing	3	3.1		
	Total	98	100.0		

Source: Research Data

From Table 4.4, out of 98 respondents, 98 respondents gave feedback regarding the number of employees, which showed the number of employees and the valid percentages. The majority were 92 respondents with 9 or less employees representing 93.9 per cent of the total respondents, therefore micro-enterprises by number employee, while 6 respondents had 10 or more employees representing 6.1 percent of total respondents. Out of 98 respondents, 96 respondents gave feedback regarding the annual revenue, which showed the annual revenue and the valid percentages. The majority were 95 respondents with Kshs. 231,000,000 or less in revenue representing 99 per cent of the total respondents while 1 respondents had Kshs. 231,000,000 or more in revenue representing 1 percent of total respondents. Also, out of 98 respondents, 95 respondents gave feedback regarding the total asset value, which showed the total asset value and the valid percentages. The majority

were 53 respondents with Kshs. 870,000 or less in total asset value representing 55.8 per cent of the total respondents while 42 respondents had Kshs. 870,000 or more in total asset value representing 44.2 percent of total respondents.

Table 4.5 Employee Training

Item	Category	Frequency	Percent	Valid Percent	Cumulative Percent
Employee Training	Yes	28	28.6	28.6	28.6
	No	70	71.4	71.4	100.0
	Total	98	100.0	100.0	
Employee Training Function	Customer Service	9	9.2	33.3	33.3
	Sales and Marketing	13	13.3	48.1	81.5
	Customer Service, Sales and Marketing	4	4.1	14.8	96.3
	Pharmaceutical	1	1.0	3.7	100.0
	Total	27	27.6	100.0	
	N/A	70	71.4		
	Missing	1	1.0		
	Total	71	72.4		
	Total	98	100.0		

Source: Research Data

From Table 4.5, out of 98 respondents, 98 respondents gave feedback regarding employee training, which showed if the employees attended training and the valid percentages. The majority were 70 respondents who did not attend any training representing 71.4 per cent of the total respondents while 28 respondents who attended training representing 28.6 percent of total respondents.

Table 4.6 Technology Adopted

Item	Category	Frequency	Percent	Valid Percent	Cumulative Percent
	Online Marketing	43	43.9	65.2	65.2

Table 4.6 Technology Adopted

Item	Category	Frequency	Percent	Valid Percent	Cumulative Percent
Technology Adopted	Accounting Software	4	4.1	6.1	71.2
	Mobile and Email Communication	10	10.2	15.2	86.4
	Customer Relationship Management Software	3	3.1	4.5	90.9
	Supply Chain Management Software	3	3.1	4.5	95.5
	Point of Sale Units	1	1.0	1.5	97.0
	Enterprise Resource Planning	1	1.0	1.5	98.5
	Direct Marketing	1	1.0	1.5	100.0
	Total	66	67.3	100.0	
	Missing	32	32.7		
	Total	98	100.0		

Source: Research Data

4.3 Entrepreneur Profile of the Respondents

The entrepreneur characteristics of the respondents analysed included gender, number, age, work experience, level of education and business related training of founders or managers, previous business venture and success or failure of previous business by the founders or managers.

Table 4.7 Entrepreneur Profile

Item	Category	Frequency	Percent	Valid Percent	Cumulative Percent
Gender of founder or manager	Male	45	45.9	45.9	45.9
	Female	47	48.0	48.0	93.9
	Both	6	6.1	6.1	100.0
	Total	98	100.0	100.0	
Number of founders	1 - 3	87	88.8	88.8	88.8
	4 - 10	11	11.2	11.2	100.0
	Total	98	100.0	100.0	
Age of founder or manager	18 - 25 years	12	12.2	12.2	12.2
	26 - 35 years	47	48.0	48.0	60.2
	36 – 49 years	34	34.7	34.7	94.9
	Above 50 years	5	5.1	5.1	100.0

Table 4.7 Entrepreneur Profile

Item	Category	Frequency	Percent	Valid Percent	Cumulative Percent
	Total	98	100.0	100.0	
Founder or manager work experience	Less than 3 years	11	11.2	11.2	11.2
	3 - 5 years	33	33.7	33.7	44.9
	6 - 10 years	23	23.5	23.5	68.4
	More than 10 years	31	31.6	31.6	100.0
	Total	98	100.0	100.0	
Founder or manager level of education	High School	17	17.3	17.5	17.5
	Diploma	32	32.7	33.0	50.5
	Undergraduate Degree	45	45.9	46.4	96.9
	PhD	2	2.0	2.1	99.0
	Masters	1	1.0	1.0	100.0
	Total	97	99.0	100.0	
	Missing	1	1.0		
	Total	98	100.0		
Founder or manager have business related training	Yes	39	39.8	40.6	40.6
	No	57	58.2	59.4	100.0
	Total	96	98.0	100.0	
	Missing	2	2.0		
	Total	98	100.0		
Founder or manager previous business	Yes	57	58.2	59.4	59.4
	No	39	39.8	40.6	100.0
	Total	96	98.0	100.0	
	N/A	1	1.0		
	Missing	1	1.0		
	Total	2	2.0		
	Total	98	100.0		
Success or failure of previous business	Fail	9	9.2	16.7	16.7
	Success	45	45.9	83.3	100.0
	Total	54	55.1	100.0	
	N/A	43	43.9		
	Missing	1	1.0		
	Total	44	44.9		
	Total	98	100.0		

Source: Research Data

From Table 4.7, out of 98 respondents that responded to the gender of founder or manager,

45 respondents representing 45.9 per cent were male; 48 respondents representing 48 per cent were female; and 6 respondents representing 6.1 per cent included both male and female founders. Out of 98 respondents that responded to the number of founders, 87 respondents representing 88.8 per cent were between 1-3 founders; and 11 respondents representing 11.2 per cent were between 4-10 founders. Out of 98 respondents that responded to the age of founder, majority were 47 respondents representing 48 per cent aged between 24-35 years. Out of 98 respondents that responded to the founder or manager work experience, majority were 33 respondents representing 33.7 per cent with work experience between 3-5 years and 31 respondents representing 31.6 per cent with work experience of more than 10 years. Out of 97 respondents that responded to the founder or manager level of education, majority were 45 respondents representing 46.4 per cent with undergraduate degrees. Out of 96 respondents that responded to the founder or manager business related training, majority were 57 respondents representing 59.4 per cent who indicated no business related training. Out of 96 respondents that responded to the founder or manager previous business venture, majority were 57 respondents representing 59.4 per cent who indicated the founder had previous business venture. Out of 54 respondents that responded to the success or failure of previous business, majority were 45 respondents representing 83.3 per cent who indicated the founder had success in the previous business venture.

4.4 Agglomeration, Profit and Growth of Micro-enterprises

The respondents were asked to indicate the number of similar businesses within 100m and changes in profits and growth (sales and assets value) performance of the micro-enterprise in the last one year. This was to enable analysis of the relationship between the independent

variable agglomeration and the dependent variables of profit and growth.

4.4.1 Agglomeration, Knowledge Spill-over and Heightened Demand Externalities.

Descriptive statistics showed whether businesses get new ideas from neighbouring businesses (knowledge spill-over externality).

Table 4.8 New ideas from neighbouring businesses

Item	Category	Frequency	Percent	Valid Percent	Cumulative Percent
New Ideas from neighbouring businesses	Yes, mostly from similar competing businesses	64	65.3	65.3	65.3
	Yes, mostly from different non-competing businesses	23	23.5	23.5	88.8
	No	11	11.2	11.2	100.0
	Total	98	100.0	100.0	

Source: Research Data

From Table 4.8, out of 98 respondents that responded to the item, 64 representing 65.3 per cent indicated that the micro-enterprise obtains new ideas from neighbouring similar competing businesses; 23 representing 23.5 per cent indicated that the micro-enterprise obtains new ideas from neighbouring different non-competing businesses; and 11 representing 11.2 per cent indicated that the micro-enterprise does not obtain new ideas from neighbouring businesses.

Correlation analysis using the Spearman Rho rank order for ordinal variables identified the relationship between location of similar businesses and increased number of customers (heightened demand externality). The table below shows the results of the correlation analysis.

Table 4.9 Location of similar businesses and increased number of customers

			Similar businesses within 100m	Close location to similar competing businesses has increased number of customers
Spearman's rho	Similar businesses within 100m	Correlation Coefficient	1.000	.228*
		Sig. (2-tailed)	.	.025
		N	98	96
	Close location to similar competing businesses has increased number of customers	Correlation Coefficient	.228*	1.000
		Sig. (2-tailed)	.025	.
		N	96	96

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Research Data

Table 4.9 above shows correlation analysis carried out to show the association between close location of similar businesses and increased number of customers. The results showed that there was a positive correlation between the close location of similar businesses and increased number of customers ($r = 0.228$, at $p < 0.05$). The relationship was statistically significant.

4.4.2 Agglomeration and Profit

Cross-tabulation was used to indicate the relationship between agglomeration and profit. Odds ratios were used to indicate the likelihood of a profit performance category occurring due to the variable showing similar businesses within 100m. An odds ratio (OR) is a measure of association between an exposure and an outcome. The OR represents the odds that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure. ORs form the basis of statistical techniques for multivariate analysis of data comprising categorical variables, including

those of log-linear modelling and logistic regression, and are widely used wherever researchers are interested in modelling relative probabilities or chances (Marshall, 1998). ORs allow us to appreciate comparative chances.

Table 4.10 Similar businesses within 100m * Profit performance in the last year %

		Profit performance in the last year %									
Item	**Category**	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40 % increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than 100% increase**	**Total**
Similar businesses within 100m	**Less than 10**	**0**	**0**	**3**	**2**	**4**	**20**	**9**	**0**	**0**	**38**
	Cumulative	38.00	38.00	38.00	35.00	33.00	29.00	9.00	0.00	0.00	
	Cumulative Proportion	1.00	1.00	1.00	0.92	0.87	0.76	0.24	0.00	0.00	
	Cummulative Odds	-	-	-	11.67	6.60	3.22	0.31	0.00	0.00	
	10 - 25	**1**	**3**	**1**	**1**	**3**	**18**	**12**	**1**	**1**	**41**
	Cummulative	41.00	40.00	37.00	36.00	35.00	32.00	14.00	2.00	1.00	
	Cummulative Proportion	1.00	0.98	0.90	0.88	0.85	0.78	0.34	0.05	0.02	
	Cummulative Odds	-	40.00	9.25	7.20	5.83	3.56	0.52	0.05	0.03	
	26 - 40	**0**	**0**	**0**	**0**	**2**	**3**	**0**	**1**	**0**	**6**
	Cummulative	6.00	6.00	6.00	6.00	6.00	4.00	1.00	1.00	0.00	
	Cummulative Proportion	1.00	1.00	1.00	1.00	1.00	0.67	0.17	0.17	0.00	
	Cummulative Odds	-	-	-	-	-	2.00	0.20	0.20	0.00	
	41 - 60	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**0**	**0**	**4**
	Cumulative	4.00	4.00	4.00	4.00	4.00	3.00	1.00	0.00	0.00	
	Cummulative Proportion	1.00	1.00	1.00	1.00	1.00	0.75	0.25	0.00	0.00	
	Cummulative Odds	-	-	-	-	-	3.00	0.33	0.00	0.00	
	More Than 60	**0**	**0**	**2**	**3**	**1**	**3**	**0**	**0**	**0**	**9**
	Cummulative	9.00	9.00	9.00	7.00	4.00	3.00	0.00	0.00	0.00	
	Cummulative Proportion	1.00	1.00	1.00	0.78	0.44	0.33	0.00	0.00	0.00	
	Cummulative Odds	-	-	-	3.50	0.80	0.50	0.00	0.00	0.00	
Total		**1**	**3**	**6**	**6**	**11**	**46**	**22**	**2**	**1**	**98**
Odds Ratio {Less Than 10}/{10-25}		-	-	-	1.62037	1.131429	0.90625	0.598522	0	0	
Odds Ratio {26-40}/{10-25}		-	-	-	-	-	0.5625	0.385714	3.9	0	
Odds Ratio {41-60}/{10-25}		-	-	-	-	-	0.84375	0.642857	0	0	
Odds Ratio {More Than 60}/{10-25}		-	-	-	0.486111	0.137143	0.140625	0	0	0	

Source: Research Data

The baseline used for the comparison of the odds was the category between 10-25 similar businesses as it was chosen by the majority of the respondents. Expressing the odds ratios above as percentages (i.e. 1-odds ratio *100) indicated less and more likelihoods shown by the positive and negative symbols respectively as shown below.

Odds ratios	More than 100 decrease	41 - 70 % decrease	10 - 40 % decrease	Less than 10 % decrease	Less than 10% increase	10-40% increase	41 - 70 % increase	71 - 100 % increase	More than - increase
Odds ratio {less than 10}/{10-25}	-	-	-	-62%	-13%	9%	40%	-	-
Odds ratio {26-40}/{10-25}	-	-	-	-	-	44%	61%	-290%	-
Odds ratio {41-60}/{10-25}	-	-	-	-	-	16%	36%	-	-
Odds ratio {more than 60}/{10-25}	-	-	-	51%	86%	86%	-	-	-

From above Table 4.10 odds' ratios, a business located with less than 10 close businesses within 100m was 62 percent more likely to experience a less than 10 percent decrease in profit, 13 percent more likely to experience a less than 10 percent increase in profit, 9 percent less likely to experience a 10-40 percent increase in profit , 40 percent less likely to experience a 41-70 percent increase in profit, 100 percent less likely to experience a 71-100 percent increase in profit and 100 percent less likely to experience a more than 100 percent increase in profit than a business close to 10–25 similar businesses. A business located with 26-40 close businesses within 100m was 290 percent more likely to experience a 71-100 percent increase in profit than one with 10-25 close businesses.

4.4.3 Agglomeration and Sales

Cross-tabulation was used to indicate the relationship between agglomeration and sales. Odds ratios were used to indicate the likelihood of a sales performance category occurring due to the variable showing similar businesses within 100m.

Table 4.11 Similar businesses within 100m * Sales performance in the last year %

		Sales performance in the last year %									
Item	**Category**	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than 100% increase**	**Total**
Similar businesses within 100m	**Less Than 10**	0	0	5	2	2	17	9	2		**37**
	Cummulative	37.00	37.00	37.00	32.00	30.00	28.00	11.00	2.00	0.00	
	Cummulative Proportion	1.00	1.00	1.00	0.86	0.81	0.76	0.30	0.05	0.00	
	Cummulative Odds	-	-	-	6.40	4.29	3.11	0.42	0.06	0.00	
	10 - 25	1	1	4	2	5	14	13	1		**41**
	Cummulative	41.00	40.00	39.00	35.00	33.00	28.00	14.00	1.00	0.00	
	Cummulative Proportion	1.00	0.98	0.95	0.85	0.80	0.68	0.34	0.02	0.00	
	Cummulative Odds	-	40.00	19.50	5.83	4.13	2.15	0.52	0.03	0.00	
	26 - 40	0	0	1	0	1	3	1	0		**6**
	Cummulative	6.00	6.00	6.00	5.00	5.00	4.00	1.00	0.00	0.00	
	Cummulative Proportion	1.00	1.00	1.00	0.83	0.83	0.67	0.17	0.00	0.00	
	Cummulative Odds	-	-	-	5.00	5.00	2.00	0.20	0.00	0.00	
	41 - 60	0	0	0	1	1	1	0	1	**0**	**4**
	Cummulative	4.00	4.00	4.00	4.00	3.00	2.00	1.00	1.00	0.00	
	Cummulative Proportion	1.00	1.00	1.00	1.00	0.75	0.50	0.25	0.25	0.00	
	Cummulative Odds	-	-	-	-	3.00	1.00	0.33	0.33	0.00	
	More Than 60	0	1	3	1	1	1	1	0	**0**	**8**
	Cummulative	8.00	8.00	7.00	4.00	3.00	2.00	1.00	0.00	0.00	
	Cummulative Proportion	1.00	1.00	0.88	0.50	0.38	0.25	0.13	0.00	0.00	
	Cummulative Odds	-	-	7.00	1.00	0.60	0.33	0.14	0.00	0.00	
Total		**1**	**2**	**13**	**6**	**10**	**36**	**24**	**4**		**96**
Odds Ratio {Less Than 10}/{10-25}		-	-	-	1.097143	1.038961	1.444444	0.815934	2.285714	-	
Odds Ratio {26-40}/{10-25}		-	-	-	0.857143	1.212121	0.928571	0.385714	0	-	
Odds Ratio {41-60}/{10-25}		-	-	-	-	0.727273	0.464286	0.642857	13.33333	-	
Odds Ratio {More Than 60}/{10-25}		-	-	0.358974	0.171429	0.145455	0.154762	0.27551	0	-	

Source: Research Data

The baseline used for the comparison of the odds was the category between 10-25 similar

businesses as it was chosen by the majority of the respondents. Expressing the odds ratios above as percentages (i.e. 1-odds ratio *100) indicated less and more likelihoods shown by the positive and negative symbols respectively as shown below.

Odds Ratio	More than 100 decrease	41 - 70 % decrease	10 - 40 % decrease	Less than 10 % decrease	Less than 10% increase	10-40% increase	41 - 70 % increase	71 - 100 % increase	More than - increase
Odds ratio {less than 10}/{10-25}	-	-	-	-10%	-4%	-44%	18%	-129%	-
Odds ratio {26-40}/{10-25}	-	-	-	14%	-21%	7%	61%	-	-
Odds ratio {41-60}/{10-25}	-	-	-	-	27%	54%	36%	-1233%	-
Odds ratio {more than 60}/{10-25}	-	-	64%	83%	85%	85%	72%	-	-

From above Table 4.11 odds' ratio, a business located with less than 10 close businesses within 100m was 10 percent more likely to experience a less than 10 percent decrease in sales, 4 percent more likely to experience a less than 10 percent increase in sales, 44 percent more likely to experience a 10-40 percent increase in sales , 18 percent less likely to experience a 41-70 percent increase in sales and 129 percent more likely to experience a 71-100 percent increase in sales than a business close to 10–25 similar businesses. A business located with 41-60 close businesses within 100m was 1233 percent more likely to experience a 71-100 percent increase in sales.

4.4.4 Agglomeration and Asset Value

Cross-tabulation was used to indicate the relationship between agglomeration and sales. Odds ratios were used to indicate the likelihood of an asset value performance category occurring due to the variable showing similar businesses within 100m.

Table 4.12 Similar businesses within 100m * Asset value performance in last year %

		Asset Value performance in the last year %									
Item	**Category**	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than 100% increase**	Total
Similar businesses within 100m	**Less than 10**	**0**	**2**	**1**	**1**	**10**	**10**	**12**	**1**		**37**
	cummulative	37.00	37.00	35.00	34.00	33.00	23.00	13.00	1.00	0.00	
	cummulative proportion	1.00	1.00	0.95	0.92	0.89	0.62	0.35	0.03	0.00	
	cummulative Odds	-	-	17.50	11.33	8.25	1.64	0.54	0.03	0.00	
	10 - 25	**1**	**1**	**4**	**2**	**5**	**14**	**13**	**1**		**41**
	cummulative	41.00	40.00	39.00	35.00	33.00	28.00	14.00	1.00	0.00	
	cummulative proportion	1.00	0.98	0.95	0.85	0.80	0.68	0.34	0.02	0.00	
	cummulative Odds	-	40.00	19.50	5.83	4.13	2.15	0.52	0.03	0.00	
	26 - 40	**0**	**0**	**1**	**0**	**1**	**3**	**1**	**0**		**6**
	cummulative	6.00	6.00	6.00	5.00	5.00	4.00	1.00	0.00	0.00	
	cummulative proportion	1.00	1.00	1.00	0.83	0.83	0.67	0.17	0.00	0.00	
	cummulative Odds	-	-	-	5.00	5.00	2.00	0.20	0.00	0.00	
	41 - 60	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**3**
	cummulative	3.00	3.00	3.00	3.00	3.00	3.00	1.00	1.00	0.00	
	cummulative proportion	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.00	
	cummulative Odds	-	-	-	-	-	-	0.50	0.50	0.00	
	More than 60	**0**	**1**	**3**	**1**	**1**	**1**	**1**	**0**	**0**	**8**
	cummulative	8.00	8.00	7.00	4.00	3.00	2.00	1.00	0.00	0.00	
	cummulative proportion	1.00	1.00	0.88	0.50	0.38	0.25	0.13	0.00	0.00	
	cummulative Odds	-	-	7.00	1.00	0.60	0.33	0.14	0.00	0.00	
Total		**1**	**3**	**5**	**4**	**24**	**24**	**27**	**7**		**95**
Odds ratio {less than 10}/{10-25}		-	-	0.897436	1.942857	2	0.762755	1.044643	1.111111	-	
Odds ratio {26-40}/{10-25}		-	-	-	0.857143	1.212121	0.928571	0.385714	0	-	
Odds ratio {41-60}/{10-25}		-	-	-	-	-	-	0.964286	20	-	
Odds ratio {more than 60}/{10-25}		-	-	0.358974	0.171429	0.145455	0.154762	0.27551	0	-	

Source: Research Data

The baseline used for the comparison of the odds was the category between 10-25 similar businesses as it was chosen by the majority of the respondents. Expressing the odds ratios

above as percentages (i.e. 1-odds ratio *100) indicated less and more likelihoods shown by the positive and negative symbols respectively as shown below.

Odds Ratio	More than 100 decrease	41 - 70 % decrease	10 - 40 % decrease	Less than 10 % decrease	Less than 10% increase	10-40% increase	41 - 70 % increase	71 - 100 % increase	More than - increase
Odds ratio {less than 10}/{10-25}	-	-	10%	-94%	--	24%	-4%	-11%	-
Odds ratio {26-40}/{10-25}	-	-	-	14%	-21%	7%	61%	-	-
Odds ratio {41-60}/{10-25}	-	-	-	-	-	-	4%	-1900%	-
Odds ratio {more than 60}/{10-25}	-	-	64%	83%	85%	85%	72%	-	-

From above Table 4.12 odds' ratio, a business located with less than 10 close businesses within 100m was 10 percent less likely to experience a less than 10 percent decrease in asset value, 94 percent more likely to experience a less than 10 percent decrease in asset value, 100 percent more likely to experience a 10-40 percent increase in sales, 24 percent less likely to experience a 10-40 percent increase in asset value, 4 percent more likely to experience a 41-70 percent increase in asset value and 11 percent more likely to experience a 71-100 percent increase in asset value than a business close to 10–25 similar businesses. A business located with 41-60 close businesses within 100m was 1900 percent less likely to experience a 71-100 percent increase in asset value.

4.5 Business and Entrepreneur Characteristics, Profit and Growth of Micro-Enterprises

The business and entrepreneurs profiles were the moderating variables and were evaluated for relationships against the profit and growth (sales and asset value growth) of the micro-enterprises.

4.5.1 Number of Employees, Profit and Growth

The cross-tabulation table between number of employees, profit and growth were as below Table 4.13.

Table 4.13 Number of Employees –Cross Tabulation

		More than 100 decrease	41 - 70 % decrease	10 - 40 % decrease	Less than 10 % decrease	Less than 10% increase	10-40% increase	41 - 70 % increase	71 - 100 % increase	More than 100% increase	Total
		Profit performance in the last year %									
Number of Employees	1 -3	1	2	5	4	9	28	16	1	1	**67**
	4 - 6	0	1	0	1	1	13	5	1	0	**22**
	7 - 9	0	0	0	0	0	3	0	0	0	**3**
	10 - 49	0	0	1	1	1	1	1	0	0	**5**
	More than 49	0	0	0	0	0	1	0	0	0	**1**
Total		**1**	**3**	**6**	**6**	**11**	**46**	**22**	**2**	**1**	**98**
		Sales performance in the last year %									**Total**
Number of Employees	1 -3	0	2	11	5	7	24	16	1	0	**66**
	4 - 6	1	0	2	0	2	8	7	2	0	**22**
	7 - 9	0	0	0	0	1	1	1	0	0	**3**
	10 - 49	0	0	0	1	0	2	0	1	0	**4**
	More than 49	0	0	0	0	0	1	0	0	0	**1**
Total		**1**	**2**	**13**	**6**	**10**	**36**	**24**	**4**	**0**	**96**
		Asset Value performance in the last year %									**Total**
Number of Employees	1 -3	1	1	4	3	17	18	18	3	0	**65**
	4 - 6	0	2	1	1	3	4	7	4	0	**22**
	7 - 9	0	0	0	0	2	1	0	0	0	**3**
	10 - 49	0	0	0	0	2	0	2	0	0	**4**
	More than 49	0	0	0	0	0	1	0	0	0	**1**
Total		**1**	**3**	**5**	**4**	**24**	**24**	**27**	**7**	**0**	**95**

Source: Research Data

The odds ratios as percentages from cross-tabulation table between number of employees, profit and growth were as below. Less and more likelihoods are shown by the positive and negative symbols respectively. The baseline used for the comparison of the odds was the category between 1-3 number of employees as it was chosen by the majority of the respondents as shown in Table 4.13.

Table 4.14 Number of Employees Odds Ratios

	Profit performance in the last year %								
Odds ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than - increase**
Odds ratio {4-6}/{1-3}	-	-	2%	-185%	-118%	-189%	-2%	-55%	-
Odds ratio {7-9}/{1-3}	-	-	-	-	-	-	-	-	-
Odds ratio {10-49}/{1-3}	-	-	-	46%	67%	70%	32%	-	-
Odds ratio {More than 49}/{1-3}	-	-	-	-	-	-	-	-	-
	Sales performance in the last year %								
Odds ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than - increase**
Odds ratio {4-6}/{1-3}	-	-	34%	-55%	-138%	-107%	--	-550%	-
Odds ratio {7-9}/{1-3}	-	-	-	-	-	-22%	-44%	-	-
Odds ratio {10-49}/{1-3}	-	-	-	-	-13%	-83%	4%	-2067%	-
Odds ratio {More than 49}/{1-3}	-	-	-	-	-	-	-	-	-
	Asset Value performance in the last year %								
Odds ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than - increase**
Odds ratio {4-6}/{1-3}	-	-	68%	36%	28%	-43%	-110%	-359%	-
Odds ratio {7-9}/{1-3}	-	-	-	-	-	67%	-	-	-
Odds ratio {10-49}/{1-3}	-	-	-	-	-	33%	-110%	-	-
Odds ratio {More than 49}/{1-3}	-	-	-	-	-	-	-	-	-

A retailer with 4-6 employees was 55 percent more likely to experience a 71-100 percent increase in profit and 185 percent more likely to experience a less than 10 percent decrease in profit than one with 1-3 employees. A retailer with 4-6 employees was 550 percent more likely to experience a 71-100 percent increase in sales than one with 1-3 employees. A retailer with 4-6 employees was 359 percent more likely to experience a 71-100 percent increase in asset value than one with 1-3 employees.

4.5.2 Asset Value on Profit and Growth

The cross-tabulation table between asset value, profit and growth were as below Table 4.15.

Table 4.15 Asset Value – Cross Tabulation

		More than 100 decrease	41 - 70 % decrease	10 - 40 % decrease	Less than 10 % decrease	Less than 10% increase	10-40% increase	41 - 70 % increase	71 - 100 % increase	More than 100% increase	Total
		Profit performance in the last year %									
Total asset value	Less than 100,000	0	0	0	0	0	2	0	0	0	**2**
	100,000 – 499,000	0	0	1	2	3	11	2	0	0	**19**
	500,000 - 870,000	1	1	2	1	4	13	8	1	1	**32**
	More than 870,000	0	2	3	2	3	19	12	1	0	**42**
Total		1	3	6	5	10	45	22	2	1	**95**
		Sales performance in the last year %									
Total asset value	Less than 100,000	0	0	0	1	0	1	0	0	0	**2**
	100,000 – 499,000	0	1	3	2	4	5	2	1	0	**18**
	500,000 - 870,000	1	0	7	0	2	17	5	0	0	**32**
	More than 870,000	0	1	3	1	4	13	16	3	0	**41**
Total		1	2	13	4	10	36	23	4	0	**93**
		Asset Value performance in the last year %									
Total asset value	Less than 100,000	0	0	0	0	0	1	1	0	0	**2**
	100,000 – 499,000	0	1	1	0	4	5	5	2	0	**18**
	500,000 - 870,000	1	1	3	1	8	7	7	3	0	**31**
	More than 870,000	0	1	1	3	9	11	14	2	0	**41**
Total		1	3	5	4	21	24	27	7	0	**92**

Source: Research Data

The odds ratios as percentages from cross-tabulation table between asset value, profit and growth are as below. The less and more likelihoods are shown by the positive and negative symbols respectively. The baseline used for the comparison of the odds is the category between of more than Kshs. 870,000 in asset value as it was chosen by the majority of the respondents as shown in Table 4.15.

Table 4.16 Asset value Odds Ratios

	Profit performance in the last year %								
Odds ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10 % increase**	**10-40 % increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than - increase**
Odds ratio {Less than 100,000}/{More than 870,000}	-	-	-	-	-	-	-	-	-
Odds ratio {100,000-499,000}/{More than 870,000}	-	-	-	-143%	-7%	32%	74%	-	-
Odds ratio {500,000-870,000}/{More than 870,000}	-	-	25%	5%	-8%	20%	-1%	-173%	-

	Sales performance in the last year %								
Odds ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than - increase**
Odds ratio {Less than 100,000}/{More than 870,000}	-	-	-	-	86%	72%	-	-	-
Odds ratio {100,000-499,000}/{More than 870,000}	-	-	58%	62%	72%	78%	77%	25%	-
Odds ratio {500,000-870,000}/{More than 870,000}	-	-	22%	68%	58%	38%	79%	-	-

	Asset Value performance in the last year %								
Odds ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than - increase**
Odds ratio {Less than 100,000}/{More than 870,000}	-	-	-	-	-	-	-56%	-	-
Odds ratio {100,000-499,000}/{More than 870,000}	-	-	58%	59%	-11%	-4%	1%	-144%	-
Odds ratio {500,000-870,000}/{More than 870,000}	-	-	64%	73%	42%	37%	26%	-109%	-

A retailer with an asset value of 100,000-499,000 was 143 percent more likely to decrease profit by less than 10 percent than one with asset value of more than 870,000 and 74 per cent less likely to increase profit by 41-70 per cent than one with asset value of more than 870,000.

4.5.3 Firm Age, Profit and Growth

The cross-tabulation table between firm age, profit and growth were as below Table 4.17.

Table 4.17 Firm Age – Cross Tabulation

		More than 100 decrease	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than 100% increase**	**Total**
		Profit performance in the last year %									
Period in operation	Less than 1 year	0	0	0	0	3	5	1	0	0	**9**
	1 - 3 years	0	2	2	2	3	18	6	1	0	**34**
	4 - 7 years	1	0	3	1	3	12	12	1	0	**33**

	8 - 10 years	0	1	1	1	1	6	2	0	1	**13**
	More than 10 years	0	0	0	2	1	5	1	0	0	**9**
Total		**1**	**3**	**6**	**6**	**11**	**46**	**22**	**2**	**1**	**98**
					Sales performance in the last year %						
Period in operation	Less than 1 year	0	0	0	1	2	2	2	1	1	**9**
	1 - 3 years	0	1	5	3	2	17	6	0	0	**34**
	4 - 7 years	1	1	2	1	4	10	11	2	0	**32**
	8 - 10 years	0	0	4	0	1	4	4	0	0	**13**
	More than 10 years	0	0	2	1	1	3	1	1	0	**9**
Total		**1**	**2**	**13**	**6**	**10**	**36**	**24**	**4**	**1**	**97**
					Asset Value performance in the last year %						
Period in operation	Less than 1 year	0	0	0	1	1	5	0	1	1	**9**
	1 - 3 years	0	2	2	2	9	4	11	4	0	**34**
	4 - 7 years	0	1	2	1	6	11	9	1	1	**32**
	8 - 10 years	1	0	0	0	4	3	4	1	0	**13**
	More than 10 years	0	0	1	0	4	1	3	0	0	**9**
Total		**1**	**3**	**5**	**4**	**24**	**24**	**27**	**7**	**2**	**97**

Source: Research Data

The odds ratios as percentages from cross-tabulation table between firm age, profit and growth are as below, less and more likelihoods shown by the positive and negative symbols respectively. The baseline used for the comparison of the odds was the category 1-3 years as it was chosen by the majority of the respondents.

Table 4.18 Firm Age Odds Ratios

	Profit performance in the last year %								
Odds ratio	More than 100 decrease	41 - 70 % decrease	10 - 40 % decrease	Less than 10 % decrease	Less than 10% increase	10-40% increase	41 - 70 % increase	71 - 100 % increase	More than - increase
Odds ratio {less than 1 year}/{1-3}	-	-	-	-	-	28%	52%	-	-
Odds ratio {4-7 years}/{1-3}	-	-	--	3%	-20%	-13%	-151%	-3%	-
Odds ratio {8-10 years}/{1-3}	-	-	25%	27%	29%	19%	-16%	-175%	-
Odds ratio {more than 10 years}/{1-3}	-	-	-	-	25%	28%	52%	-	-

	Sales performance in the last year %								
Odds ratio	More than 100 decrease	41 - 70 % decrease	10 - 40 % decrease	Less than 10 % decrease	Less than 10% increase	10-40% increase	41 - 70 % increase	71 - 100 % increase	More than - increase
Odds ratio {less than 1 year}/{1-3}	-	-	-	-	-152%	20%	-180%	-	-
Odds ratio {4-7 years}/{1-3}	-	-	55%	-50%	-94%	-22%	-219%	-	-
Odds ratio {8-10 years}/{1-3}	-	-	-	52%	19%	23%	-107%	-	-
Odds ratio {more than 10 years}/{1-3}	-	-	-	25%	28%	40%	-33%	-	-

	Asset Value performance in the last year %								
Odds ratio	More than 100 decrease	41 - 70 % decrease	10 - 40 % decrease	Less than 10 % decrease	Less than 10% increase	10-40% increase	41 - 70 % increase	71 - 100 % increase	More than - increase
Odds ratio {less than 1 year}/{1-3}	-	-	-	-	-50%	-137%	82%	-7%	-
Odds ratio {4-7 years}/{1-3}	-	-	-88%	-24%	-45%	-66%	40%	75%	-
Odds ratio {8-10 years}/{1-3}	-	-	25%	-60%	-157%	-26%	21%	38%	-
Odds ratio {more than 10 years}/{1-3}	-	-	-	-7%	-71%	37%	37%	-	-

A retailer who has been in operation for 8-10 years was 175 percent more likely to increase profit by 71-100 percent, 107 per cent more likely to increase sales by 41-70 per cent and 157 per cent more likely to increase asset by less than 10 per cent than one in operation between 1-3 years.

4.5.4 Management Skills, Profit and Growth

The cross-tabulation table between management skills, profit and growth were as below Table 4.19.

Table 4.19 Management Skills Cross Tabulation

		41 - 70 % decrease	10 - 40 % decrease	Less than 10 % decrease	Less than 10% increase	10-40 % increase	41 - 70 % increase	71 - 100 % increase	Total
		Profit performance in the last year %							
Success or failure of previous business	Fail	0	2	1	2	1	2	1	**9**
	Success	2	3	3	5	23	9	0	**45**
Total		**2**	**5**	**4**	**7**	**24**	**11**	**1**	**54**
		Sales performance in the last year %							
Success or failure of previous business	Fail	0	3	0	2	3	0	0	**8**
	Success	2	5	4	2	18	13	1	**45**

Total		**2**	**8**	**4**	**4**	**21**	**13**	**1**	**53**		
					Asset Value performance in the last year %						
Success or failure of previous business	Fail	0	1	0	3	2	2	0	**8**		
	Success	1	2	2	10	15	10	5	**45**		
Total		**1**	**3**	**2**	**13**	**17**	**12**	**5**	**53**		
					founder or manager level of education						
		More than 100 decrease	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than 100% increase**	**Total**
						Profit performance in the last year %					
founder or manager level of education	High School	0	0	1	1	3	11	1	0	0	**17**
	Diploma	0	1	1	1	1	14	12	2	0	**32**
	Undergraduate Degree	1	2	4	3	7	18	9	0	1	**45**
	PhD	0	0	0	1	0	1	0	0	0	**2**
	Masters	0	0	0	0	0	1	0	0	0	**1**
Total		**1**	**3**	**6**	**6**	**11**	**45**	**22**	**2**	**1**	**97**
						Sales performance in the last year %					
founder or manager level of education	High School	0	1	4	1	4	4	2	0	0	**17**
	Diploma	1	1	3	1	1	13	11	1	0	**32**
	Undergraduate Degree	0	0	6	3	5	16	11	3	0	**45**
	PhD	0	0	0	1	0	1	0	0	0	**2**
	Masters	0	0	0	0	0	1	0	0	0	**1**
Total		**1**	**2**	**13**	**6**	**10**	**35**	**24**	**4**	**0**	**97**
						Asset Value performance in the last year %					
founder or manager level of education	High School	0	0	1	1	3	4	5	1	0	**15**
	Diploma	0	2	3	2	4	6	12	3	0	**32**
	Undergraduate Degree	1	1	1	1	16	13	8	3	0	**44**
	PhD	0	0	0	0	1	0	1	0	0	**2**
	Masters	0	0	0	0	0	0	1	0	0	**1**
Total		**1**	**3**	**5**	**4**	**24**	**23**	**27**	**7**	**0**	**94**

Source: Research Data

The odds ratios as percentages from cross-tabulation table between management skill, profit and growth are as below, less and more likelihoods shown by the positive and negative symbols respectively. Management skill was measured by the education level and the success or failure of previous business venture.

The baseline used for the comparison of the odds for level of education was the category undergraduate degree as it was chosen by the majority of the respondents as shown in Table 4.19.

Table 4.20 Founder or Manager Level of Education Odds Ratios

	Profit performance in the last year %								
Odds ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10 % increase**	**10-40 % increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than - increase**
Odds ratio {High School}/{Undergraduate Degree}	-	-	-	-195%	-114%	-46%	78%	-	-
Odds ratio {Diploma}/{Undergraduate Degree}	-	-	-121%	-176%	-176%	-325%	-172%	-193%	-
Odds ratio {PhD}/{Undergraduate Degree}	-	-	-	-	71%	39%	-	-	-
Odds ratio {Masters}/{Undergraduate Degree}	-	-	-	-	-	-	-	-	-

	Sales performance in the last year %								
Odds ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than - increase**
Odds ratio {High School}/{Undergraduate Degree}	-	-	-	65%	57%	72%	69%	-	-
Odds ratio {Diploma}/{Undergraduate Degree}	-	-	-	15%	-11%	-67%	-29%	56%	-
Odds ratio {PhD}/{Undergraduate Degree}	-	-	-	-	74%	53%	-	-	-
Odds ratio {Masters}/{Undergraduate Degree}	-	-	-	-	-	-	-	-	-

	Asset Value performance in the last year %								
Odds ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than - increase**
Odds ratio {High School}/{Undergraduate Degree}	-	-	-	-2%	35%	-67%	--	2%	-
Odds ratio {Diploma}/{Undergraduate Degree}	-	-	29%	60%	64%	-59%	-165%	-41%	-
Odds ratio {PhD}/{Undergraduate Degree}	-	-	-	-	-	17%	-200%	-	-
Odds ratio {Masters}/{Undergraduate Degree}	-	-	-	-	-	-	-	-	-

A retailer with education level of high school was 46 percent more likely to increase profit by 10-40 percent, diploma 193 per cent more likely to increase profit by 71-100 per cent than one with undergraduate degree. A retailer with education level of high school was 29 percent more likely to increase sales by 41-70 percent than one with undergraduate degree. A retailer with education level of high school was 67 percent more likely to increase asset value by 10-40 percent, diploma was 165 per cent more likely to increase asset value by 41-70 per cent and PhD was 200 percent more likely to increase by 41-70% than one with undergraduate degree.

The baseline used below for the comparison of the odds for success or failure of previous business was the category Success as it was chosen by the majority of the respondents as shown in Table 4.19.

Table 4.21 Success or Failure of Previous Business Odds Ratios

	Profit performance in the last year %								
Odds ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than - increase**
Odds ratio {Fail}/{Success}	-	-	-	56%	57%	68%	--	-	-
	Sales performance in the last year %								
Odds ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than - increase**
Odds ratio {Fail}/{Success}	-	-	-	69%	46%	76%	-	-	-
	Asset Value performance in the last year %								
Odds ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than - increase**
Odds ratio {Fail}/{Success}	-	-	-	50%	13%	50%	33%	-	-

A retailer with failure in previous business was 68 percent less likely to increase profit by 10-40 percent, 76 per cent less likely to increase sales by 10-40 per cent and 33 per cent less likely to increase sales by 41-70 per cent than one with previous success.

4.5.5 Technology Adoption, Profit and Growth

The cross-tabulation table between technology adoption, profit and growth were as below Table 4.22.

Table 4.22 Technology Adoption Cross Tabulation

		More than 100 decrease	41 - 70 % decrease	10 - 40 % decrease	Less than 10 % decrease	Less than 10% increase	10-40 % increase	41 - 70 % increase	71 - 100 % increase	More than 100% increase	Total
		Profit performance in the last year %									
Technology Adoption	Yes	0	2	4	4	10	32	13	1	0	**66**
	No	1	1	2	2	1	14	9	1	1	**32**
Total		**1**	**3**	**6**	**6**	**11**	**46**	**22**	**2**	**1**	**98**
		Sales performance in the last year %									Total
Technology Adoption	Yes	0	1	5	6	9	27	13	3	1	**66**
	No	1	1	8	0	1	9	11	1	0	**32**
Total		**1**	**2**	**13**	**6**	**10**	**36**	**24**	**4**	**1**	**98**
		Asset Value performance in the last year %									Total
Technology Adoption	Yes	0	1	3	2	19	17	16	5	2	**66**
	No	1	2	2	2	5	7	11	2	0	**32**
Total		**1**	**3**	**5**	**4**	**24**	**24**	**27**	**7**	**2**	**98**

Source: Research Data

The odds ratios as percentages from cross-tabulation table between technology adoption, profit and growth are as below less and more likelihoods shown by the positive and negative symbols respectively. The baseline used for the comparison of the odds for technology adoption was the category Yes as it was chosen by the majority of the respondents.

Table 4.23 Technology Adoption Odds Ratios

	Profit performance in the last year %								
Odds Ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than 100% increase**
Odds ratio {No}/{Yes}	-	-	53%	30%	23%	-55%	-95%	-333%	-
	Sales performance in the last year %								

Odds Ratio	More than 100 decrease	41 - 70 % decrease	10 - 40 % decrease	Less than 10 % decrease	Less than 10% increase	10-40% increase	41 - 70 % increase	71 - 100 % increase	More than 100% increase
Odds ratio {No}/{Yes}	-	-	76%	77%	49%	7%	-80%	34%	-
	Asset Value performance in the last year %								
Odds Ratio	**More than 100 decrease**	**41 - 70 % decrease**	**10 - 40 % decrease**	**Less than 10 % decrease**	**Less than 10% increase**	**10-40% increase**	**41 - 70 % increase**	**71 - 100 % increase**	**More than 100% increase**
Odds ratio {No}/{Yes}	-	-	84%	63%	62%	-10%	-37%	23%	-

A retailer with no technology adoption was 333 per cent more likely to increase profit by 71-100 percent, 80 percent more likely to increase sales by 41-70 per cent and 37 per cent more likely to increase asset value by 41-70 percent than one than adopted technology.

4.6 Drivers for Agglomeration of Retail Micro-Enterprises.

The respondents were asked to indicate the factors that have resulted to agglomeration of the businesses. The descriptive table was analysed as below.

Table 4.24 Current Location Choice Factors

Item	Category	Frequency	Percent	Valid Percent	Cumulative Percent
Current Location Choice Factors	Government policy	1	1.0	1.0	1.0
	Availability of support services and amenities	55	56.1	56.7	57.7
	Other similar competing businesses	22	22.4	22.7	80.4
	High Customer Traffic	9	9.2	9.3	89.7
	Other reason	1	1.0	1.0	90.7
	Availability of support services and amenities, Other similar competing businesses	5	5.1	5.2	95.9
	Other similar competing businesses, High customer traffic	2	2.0	2.1	97.9
	Availability of Premises for lease	2	2.0	2.1	100.0
	Total	97	99.0	100.0	
	Missing	1	1.0		
	Total	98	100.0		

Source: Research Data

From Table 4.24, out of 98 respondents that responded to the item, 1 representing 1 per cent indicated that the choice of the location was as a result of government policy; 55 representing 56.7 per cent indicated that the choice of the location was as a result of availability of support services and amenities; 22 representing 22.7 per cent indicated that the choice of the location was due to location of other similar competing businesses in the same location; 9 representing 9.3 per cent indicated that the choice of the location was due to high customer traffic; 5 representing 5.2 per cent indicated that the choice of the location was due to both availability of support services and amenities and other similar competing businesses;2 representing 2.1 per cent indicated that the choice of the location was due to both availability of other similar competing businesses and high customer traffic; and, 2 representing 2.1 per cent indicated that the choice of the location was due to availability of premises for lease.

4.7 Agglomeration Challenges Affecting Retail Micro-Enterprises.

The respondents were asked to indicate the challenges experienced by micro-enterprises due to agglomeration of the businesses. Correlation analysis was carried out as below testing for fierce price competition.

Table 4.25 Similar businesses within 100m and Fierce Price Competition

			Similar businesses within 100m	Fierce price competition
Spearman's rho	Similar businesses within 100m	Correlation Coefficient	1.000	.188
		Sig. (2-tailed)	.	.065
		N	98	97
	Fierce price competition	Correlation Coefficient	.188	1.000
		Sig. (2-tailed)	.065	.
		N	97	97

Source: Research Data

Table 4.25 above shows correlation analysis carried out to show the challenges affecting business due to agglomeration. The correlation was between proximity of similar businesses and fierce price competition. The results show that there was a positive correlation between the proximity of similar businesses and fierce price competition. ($r = 0.188$, at $p < 0.1$).

CHAPTER FIVE: DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The objectives of this study were to determine the relationship between agglomeration and performance of retail micro-enterprises, the drivers that led to the agglomeration of retail micro-enterprises and the challenges encountered by retail micro-enterprises due to agglomeration in Nairobi CBD. The data collected led to the following discussions, conclusions and recommendations on these objectives.

5.2 Discussion

From analysis of the business profiles, the respondents indicated that 93.9 per cent of the businesses interviewed composed of 1 to 3 employees and so, by definition categorised as micro-enterprises. Also, the majority of respondents' employees did not attend any training representing 71.4 per cent of the total respondents.

The results of the study showed that agglomeration of retail micro-enterprises led to knowledge spill-over. New ideas were obtained from neighbouring similar competing businesses by 65.3 per cent of the respondents while 23.5 per cent indicated that the micro-enterprise obtained new ideas from neighbouring different non-competing businesses. Only 11.2 per cent indicated that the micro-enterprise did not obtain new ideas from neighbouring businesses. This corroborated the study by Jaffe et. al. (1993) that agglomerated firms were more likely to cite each other's patents due to knowledge spill over and Shaver et. al. (2000) that positive externalities, which includes knowledge spill-overs, enhanced performance of firms that agglomerate.

The results also showed that there was a positive and significant correlation between the close location of similar businesses and increased number of customers (heightened demand externalities) confirming the study by Chung et al. (2001). This was due to the fact that consumers needed to personally inspect goods and also sellers reduces consumers' search costs by agglomerating. Also, Konishi (1999) emphasizes that concentration of stores causes a market size effect.

A business located with 26-40 similar businesses within 100m was 290 percent more likely to experience a 71-100 percent increase in profit than one with 10-25 close businesses. A business located with 41-60 close businesses within 100m wass 36 percent less likely to experience a 41-70 percent increase in profit than one with 10-25 close businesses. Konishi (1999) shows that the heightened demand is much stronger for small scale concentrations but the price cutting effect dominates for a large number of stores in the same location.

A retailer with 4-6 employees was 550 percent more likely to experience a 71-100 percent increase in sales than one with 1-3 employees and 359 percent more likely to experience a 71-100 percent increase in asset value than one with 1-3 employees. A retailer who had been in operation for 8-10 years was 175 percent more likely to increase profit by 71-100 percent, 107 per cent more likely to increase sales by 41-70 per cent and 157 per cent more likely to increase asset by less than 10 per cent than one in operation between 1-3 years.

Management skills were measured according to education levels and success or failure of previous businesses. The results showed that success in a previous business venture resulted to increase in profit in the current business as opposed to those who had previous failure indicating enhanced management skills by the entrepreneur. Further, an entrepreneur with a diploma is 193 per cent more likely to increase profits by 71-100 per

cent than a graduate. The results showed differences in firms' performance due to variables related to firm size, firm age and management skills (Masakure et. al., 2009).

Technology adoption by the firms were indicated as online marketing, accounting software, mobile and email communication, customer relationship management software, supply chain management software, point of sale units, enterprise resource planning and direct marketing. As shown by the odds ratios, both increase and decrease in profits and growth (sales and asset value) were experienced by the businesses regardless of technology adoption.

Further, the study results showed the drivers leading to the agglomeration of retail micro-enterprises. Government policy accounted for 1 per cent as a motivator to locate in a particular street. A majority of the respondents at 56.7 per cent indicated that the choice of the location was as a result of availability of support services and amenities. Colocation of other similar competing businesses was a motivating factor to about 22 percent of the businesses to choose the location. High customer traffic was indicated by 9.3 per cent as reason for choice of location.

Findings on the challenges encountered by retail micro-enterprises due to agglomeration revealed that there was a positive correlation between the proximity of similar businesses and fierce price competition. Konishi (1999) indicated that concentration of stores created a price cutting effect leading to fierce price competition.

5.3 Conclusion

The study investigated the relationship between agglomeration and performance of retail micro-enterprises, the drivers that led to the agglomeration of retail micro-enterprises and the challenges encountered by retail micro-enterprises due to agglomeration. The study

specifically focused on the retail micro-enterprises in Nairobi CBD. First, the results showed agglomerated firms are more likely to get ideas from neighbouring competing businesses and experience increased number of customers (heightened demand externalities). Secondly, differences in firms' performance can be attributed to differences in the variables related to firm size, firm age, firm technology and management skills. Thirdly, majority of the respondents indicated that the choice of the location was as a result of availability of support services and amenities and colocation of other similar competing businesses. Lastly, indicating micro-enterprise challenges, it was also shown that the proximity of similar businesses led to fierce price competition.

5.4 Limitations of the Study

Most of the retail enterprises interviewed were unwilling to divulge specific financial information indicating the performance in terms of profits, sales and assets value. This necessitated categorization of these variables but the information given could not be authenticated if the percentages given were accurate. This could have led to some of the statistically non-significant results regarding some variable contrary to theoretical findings. The study also targeted micro-enterprises only and did not focus on small and medium enterprises. Future studies on agglomeration can be extended to small and medium enterprises.

5.5 Recommendations

Availability of support services and amenities and colocation of other similar competing businesses are major decisions when it comes to choice of location. Micro-enterprises can benefit if such facilities are provided by relevant authorities like municipalities through relevant policies.

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APPENDIX I: RETAIL BUSINESSES IN NAIROBI CBD

Section I: Total Number of Retail Businesses as per Nairobi County Classification

Business Activity Name	**Employees (No.)**	**Floor Space (Square Meters)**	**Total Number of Retail Businesses**
Small trader shop or retail service	up to 4	less than 50	2238
Medium trader shop or retail service	5 to 20	50 to 3000	1510
Total			3748

Section II: Streets in Nairobi CBD and Sample Size

Streets in Nairobi CBD	**Total No. of Retail Businesses**	**Stratified Sample Size**
Market Street	8	0
Kigali Road	178	5
Njugu Lane	18	0
Harambee Avenue	170	4
Moi Avenue	1244	34
Parliament Lane	13	0
City Hall Way	17	0
County Road	3	0
General Kago Street	3	0
Tubman Road	114	3
Biashara Street	236	6
Uhuru Highway	17	0
Moktar Daddah Street	180	5
Banda Street	32	1

Streets in Nairobi CBD	**Total No. of Retail Businesses**	**Stratified Sample Size**
Aga Khan Walk	44	1
Muindi Mbingu Street	216	6
Taifa Road	23	1
Utalii Street	48	1
Loita Street	45	1
Kenyatta Avenue	153	4
Monrovia Street	62	2
University Way	42	1
Wabera Street	33	1
Kimathi Street	169	4
Koinange Street	178	5
Parliament Road	40	1
Haile Sellassie Avenue	146	4
Mama Ngina Street	129	3
Standard Street	107	3
Kaunda Street	80	2
Total	**3748**	**98**

APPENDIX II: QUESTIONNAIRE

Section I: Business Profile

1. Which street/avenue/road is the business located?

……

2. Please state the industry/sector the firm is operating in or product being sold?

……

3. What is the legal nature of the business?

☐ Sole-proprietorship ☐ Partnership ☐ Limited Company

☐ Other (Please specify)…….

4. How many employees does the business have?

☐ 1 - 3 ☐ 4 - 6 ☐ 7 - 9 ☐ 10 – 49 ☐ More than 49

5. What is the annual revenue of the business in Kshs?

☐ Less than 100,000 ☐ 100,000 – 499,000

☐ 500,000 - 999,999 ☐ 1,000,000 – 49,999,999

☐ 50,000,000 – 231,000,000 ☐ More than 231,000,000

6. What is the total asset value of the business in Kshs?

☐ Less than 100,000 ☐ 100,000 – 499,000

☐ 500,000 - 870,000 ☐ More than 870,000

7. Is the business the retail part of another firm?

☐ Yes ☐ No, independent

No, other part (please specify) ……

8. How many years has the business been in operation?

☐ Less than 1 year ☐ 1 - 3 years ☐ 4 - 7 years

☐ 8 - 10 years ☐ More than 10 years

9. Do the employees attend any training to improve their skills?

☐ Yes ☐ No

If yes, please state the function of training attended?

……

10. What are some of the technology adopted by the firm to increase productivity?

……

……

11. Does the firm have a website or embraced social media (please state the social media platform)?

……

If the business has embraced the social media, how many likes or follows does the platform have? ……

Section II: Entrepreneur's Profile

12. What gender is the founder or manager?

☐ Male ☐ Female

If several, how many of each gender are they? Male…… Female……

13. What is the age of the founder (s) or manager (s)?

☐ Below 18 years ☐ 18 - 25 years ☐ 26 - 35 years

☐ 36 – 49 years ☐ Above 50 years

14. How many years of working experience do the founders or managers have?

☐ Less than 3 years ☐ 3 - 5 years

☐ 3 - 5 years ☐ More than 10 years

15. What is the founder's or manager's level of education?

☐ No formal education ☐ Primary ☐ High School

☐ Diploma ☐ Undergraduate Degree

☐ Other (please specify) ……

16. Do the founders or managers have any business related training?

☐ Yes ☐ No

17. Were the founders or managers engaging in other businesses prior to the current one?

☐ Yes ☐ No

If yes, did it fail ( ) or succeed ( )?

Section III: Part 1 – Agglomeration, Drivers and Challenges

18. Did the business have a previous location before the current location?

☐ Yes ☐ No

If yes, were there any challenges to the business due to location?

……

……

19. How many years has the business been in operation in the current location?

☐ Less than 1 year ☐ 1 - 3 years ☐ 4 - 7 years

☐ 8 - 10 years ☐ More than 10 years

20. Why did you choose the current business location?

☐ Government policy

☐ Availability of support services and amenities

☐ Other similar competing businesses

☐ Other reason (Please specify)

……

……

21. How many competing businesses selling same product are within 100m?

☐ Less than 10 ☐ 10 - 25 ☐ 26 - 40 ☐ 41 - 60 ☐ More than 60

22. On a scale of 1 to 7, please agree or disagree. Close location to similar competing businesses has led to the following.

	Strongly disagree			**Neither**		**Strongly agree**	
Question	**1**	**2**	**3**	**4**	**5**	**6**	**7**
i. Increased number of customers							
ii. Fierce price competition							

23. At times, does the business obtain new ideas or knowledge from neighbouring businesses?

☐ Yes, mostly from similar competing businesses

☐ Yes, mostly from different non-competing businesses

☐ No

24. What is the number of the founder's or manager's business connections within 100m that exchange ideas?

☐ Less than 10 ☐ 10 - 25 ☐ 26 - 40 ☐ 41 - 60 ☐ More than 60

Section III: Part 2 - Firm's Performance

25. Please fill the table below with information about your firm for the first and last

financial years.

Variable	First Financial Year of Business (Kshs.)	Last Financial Year of Business (Kshs.)
i. Net Income (Kshs.)		
ii. Total Asset Value (Kshs.)		
iii. Total Expense (Kshs.)		
iv. Total Revenue (Kshs.)		
v. Total Cost to Obtain/Produce the Products (Kshs.)		
vi. Total Operating Expenses (Kshs.)		
vii. Total Sales (Kshs.)		
viii. Number Of Employees (No.)		
ix. Units Sold (No.)		
x. Available Capital (Kshs.)		
xi. Total Taxes Paid (Kshs.)		
xii. Total Interest Paid(Kshs.)		
xiii. Sector/Industry Awards (No.)		

26. What is the percentage (%) increase/decrease in profit for last year?

☐ Less than 10 ☐ 10 - 40 ☐ 41 - 70 ☐ 71 - 100 ☐ More than 100

27. What is the percentage (%) increase/decrease in expenses for last year?

☐ Less than 10 ☐ 10 - 40 ☐ 41 - 70 ☐ 71 - 100 ☐ More than 100

28. What is the percentage (%) increase/decrease in sales for last year?

☐ Less than 10 ☐ 10 - 40 ☐ 41 - 70 ☐ 71 - 100 ☐ More than 100

29. What is the percentage (%) increase/decrease in asset value for last year?

☐ Less than 10 ☐ 10 - 40 ☐ 41 - 70 ☐ 71 - 100 ☐ More than 100

APPENDIX III: OBSERVATION SCHEDULE

1. Ease of access to the firm.
2. Availability of shopping infrastructure e.g. parking facilities and toilets.
3. Type and nature of business enterprises operating around the firm
4. Volume of business and consumer activity in the street