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**DETERMINANTS OF GROWTH OF MICRO AND SMALL PETROLEUM
ENTERPRISES IN KENYA; A CASE OF NAIROBI COUNTY**

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ABSTRACT

Purpose: MSEs and SME"s have always been the backbone and impetus for growth of an economy. To ensure their continued vitality in an increasingly competitive and globalized world, their growth must be ensured. This study therefore set out to evaluate the determinants of firm growth in an integrated way, and to identify the most important determinants of firm growth.

Methodology: The study adopted descriptive research design. A sample size of 134 respondents out of a target population of 7 corporate members listed by PIEA was drawn. The study used primary data which was largely quantitative and descriptive in nature. Both descriptive and inferential analyses were conducted.

Results: Findings reveal that whereas a majority of MSEs have considerably grown over the last five years in all respects including the number of employees, number of stations, gross sales and net profit, the growth has been largely slow and unstable characterized by declines in between the years, as regards gross sales and net profits. It was also found that a majority of the MSEs surveyed are driven by entrepreneurship skills among their management. The study also found that franchise holding significantly influences firm growth through a variety of attributes including earning the firm competitive advantage; increasing the respective firms" business opportunities. Profit margin was further found to have considerably influenced the established firm growth across a majority of the MSEs surveyed, most notably through increased profitability, increased return on investment and increased sales among others. Finally, it was found that cost of capital moderately influences growth across a majority of MSEs reached most notably through service tax, irregular cash flows, interest charges, prepayment charges, loan size, asset base and mismatch of funds.

Contribution to theory, practice and policy recommendations: The impact of the rising petrol price study on the cash flow and profitability of service stations must be addressed as an urgent matter; otherwise it might lead to some service stations being closed in the near future. It will be advisable in future to form one unity body for service station retailers. The Kenyan government should look into the possibility of introducing deregulation of the petrol price.

Key words: *Entrepreneurial Skills, Franchising Agreement Terms, Profit Margins, Cost of Capital*

1.0 INTRODUCTION

The present study attempts to provide an integrated analysis on the determinants of growth of petroleum Middle Sized Enterprises (MSEs) in Kenya. The study is anchored on the recognition that Small and Medium Enterprises (SMEs) play a major role in economic development in every country, including African countries and that growth is an important performance element and success measure in entrepreneurship. Hence, insight into the determinants of firm growth is important from a policy perspective. Over the last two decades, these determinants have been studied in various disciplines, such as economics, strategy, psychology, network theory and innovation, albeit in a highly fragmented manner. For instance, research from a psychological perspective focuses on the behavior of the entrepreneur (Begley & Boyd, 2013); research from a strategy point of view concentrates on the relationship between environment, business strategy and growth (McDougall *et al.*, 2014); while research on economics focuses on the relation between growth and firm size (Audretsch *et al.*, 2012). Thus, there exist diverse views, with none of them explaining the determinants of firm growth in a holistic manner, an aspect this study sets out to address.

Most SMEs in Kenya die within their first five years of existence, a smaller percentage goes into extinction between the sixth and tenth year while only about five to ten percent survive, thrive and grow to maturity (Aremu & Adeyemi, 2012). Many factors have been identified contributing to this premature death of SMEs. Key among them include: insufficient capital, irregular market research, over-concentration on one or two markets for finished products, lack of succession plan, inexperience, lack of proper book keeping, lack of proper records or lack of any records at all, inability to separate business and family or personal finances, lack of business strategy, inability to distinguish between revenue and profit, inability to procure the right plant and machinery, inability to engage or employ the right caliber of staff, cut-throat competition (Basil, 2005).

According to the Petroleum Institute of East Africa (PIEA) Total Kenya, Shell, Kenol Kobil and Oilibya's combined retail market share stood at 80.1 per cent in the three months ended June 2015. The retail business for service station is modelled in three platforms that is, Dealer Owned Dealer Operated (DODO), Company Owned Dealer Operated (CODO) and Company Owned Company Operated. The majority of stations (80pc) within the largest four players are operated under the CODO model.

Although micro and small enterprises SMEs are seen as veritable and viable engines of economic development, the growth and development of MSEs in the Kenyan petroleum industry have been slow and in some cases even stunted, due to a number of problems and challenges confronting this all-important sub-sector of the economy. Some of the problems highlighted in the body of literature as being responsible for their slow growth and development include: deplorable infrastructural facilities; funding and financing challenges; inadequate managerial and entrepreneurial skills; limited capacity for research and development as well as innovations; limited demand for their products and services; burden of multiple taxes; and overbearing actions of government functionaries and agents (Mburu *et al.*, 2007). Others according to World Bank (2009) include difficulties associated with complying with regulatory requirements in the specific areas of operations of the SMEs; problems of under-capitalization and difficulty with access to bank credits; bureaucratic bottlenecks; corruption and lack of transparency arising from government

regulation and regulators; as well as government's lack of interest or focus in addressing the specific factors responsible for the abysmal performance of the sub-sector (Onugu, 2005).

There is a significant body of academic research for other sectors and especially for manufacturing. While this may provide some insights applicable to the petroleum industry, there are substantial sectoral differences that may limit the usefulness of analogies (Evans, 2013). Compared to manufacturing, oil and gas activity generally has a higher capital and knowledge intensity, greater production, market/price and regulatory/policy risks and a greater requirement of high levels of ongoing investment in order to maintain production levels. The oil and gas sector is highly dynamic, embodying a strong element of continual change as new companies are formed, companies merge, companies exit, companies grow and some graduate to the next highest category (Fagbenle *et al.*, 2014). Although recent studies attempt to link determinants of MSEs growth from different perspectives or dimensions (Baum, Locke & Smith, 2012; Covin & Slevin, 2012; Lumpkin & Dess, 2013), their explanatory power is low due to the relatively small number of variables (Davidsson *et al.*, 2014).

Beckman (Beckman, 2012) contend that most of the problems of SMEs are external to it, among them bare those related to capital shortage, taxation and regulations, product liability patent and franchising abuses. The internal problems of SMEs in Nigeria include: inadequate working capital, stiff competition from larger companies, difficulties in sourcing raw materials, low capacity utilization, lack of management strategies, poor educational background of operators, and huge financial problems while the external problems include: policy inconsistencies, multiple taxation, harsh regulatory requirements and trade groups (Sidika, 2012). It is also important to note that Petroleum sector SMEs in Nairobi County are not immune from the aforementioned challenges in their day to day operations hence it was necessary to embark on a study that classifies the determinants of firm growth into four dimensions: number of employees, number of branches, profit margins and revenue determinants. Occasioned by the aforementioned gap in local literature, the present study set out to evaluate the determinants of firm growth in an integrated way, and to identify the most important determinants of firm growth. More specifically the study sought to assess the entrepreneurial skills as a determinant of growth of petroleum sector MSEs in Nairobi County, Kenya, evaluate franchising agreement terms as a determinant of growth of petroleum sector MSEs in Nairobi County, examine profit margins as a determinant of growth of petroleum sector MSEs in Nairobi County and evaluate cost of capital as a determinant of growth of petroleum sector MSEs in Nairobi County. This study takes the descriptive research design.

1.1.1 Petroleum Micro and Small Enterprises

The oil and gas sector represents the primary engine of economic activity and prosperity in both developed and developing countries, and increasingly it has become an important driver of the economy in these countries (Bekele & Zeleke, 2013). In developing countries, when the direct and indirect linkages are taken into account, this sector typically accounts for about one-half of total value added (or Gross Domestic Product), about 40 percent of employment and around 50 percent of revenues for the regional governments. At the national level, the oil and gas sector now accounts for over one-half of all exports of goods and services most countries; it is the dominant factor in the favorable trade balance; it accounts for about one quarter of all business profits and one-third of total business investment (Brown *et al.*, 2014).

In spite of the overall importance of this sector, relatively little quantitative information is available concerning the structure, behavior and performance of the various components measured in terms of firm size. Commonly, the sector is portrayed simplistically as monolithic big oil and gas, when in fact there is huge variation in the size and roles of firms (Chandler, 2012). Contrary to common perception, it is a highly complex and dynamic industry given the intricacies and sophistication associated with exploration, development and production. Generalities and folklore tend to grow up around oil and gas, and it is often difficult to separate myth from reality in terms of behavior and performance (Bigsten *et al.*, 2012).

1.1.2 An Overview of the Kenyan Petroleum Industry

Petroleum fuels constitute the main source of commercial energy in Kenya. Kenya is a net importer of petroleum products and has a refinery owned and managed by the Kenya Petroleum Refineries Ltd (KPRL), an 800 km cross country oil pipeline from Mombasa to Nairobi and Western Kenya with terminals in Nairobi, Nakuru, Eldoret and Kisumu, run by the Kenya Pipeline Company (KPC). The sector also boasts of over 30 oil importing and marketing companies comprising of four major companies namely Shell, Total, Kenol/Kobil, Oil Libya and other emerging oil companies which include the Government owned National Oil Corporation of Kenya (Daily Nation, May, 4, 2011).

The sector, which was liberalized in 1994, has since seen a lot of growth and improvements in quality and level of service. However, without an appropriate regulatory environment being in place at the time of liberalization (the existing legislation at the time was the Petroleum Act Cap 116 of 1948 with latest revision of 1972), several challenges face the sector which include proliferation of substandard petroleum dispensing and storage sites which pose environment health and safety risks; diversion of petroleum products destined for export into the local market by unscrupulous business people to evade tax and a dominance of the market by a few companies among others. The Government noted these challenges in its energy policy contained in Session Paper No. 4 of 2004 on Energy and recommended review of the Petroleum Act Cap 116 and other energy sector statutes and the introduction of a new energy sector legislation to cover petroleum, electricity and renewable energy. It also recommended the formation of a single energy sector regulator to regulate electricity, downstream petroleum, renewable energy and other forms of energy (Daily Nation, May, 4, 2011).

2.0 LITERATURE REVIEW

2.1 Theoretical Review

Various theories address the growth of petroleum sector Middle Sized Enterprises and have been advanced by a number of authors. This section will review four major theoretical perspectives of boards and governance mechanisms that are considered relevant for this study, including Resource based theory, The Game theory, The Agency theory and the Stewardship theory.

2.2.1 Resource Based Theory

Resource dependence theorists argue that organizations attempt to obtain stability and legitimacy, which is achieved through interdependencies and the exercise of power and control (Pfeffer & Salancik, 1978). The effectiveness of organizations depends on their ability to acquire the

resources needed for survival. According to Pfeffer and Salancik (1978), organizations can select one of four strategic choices or a combination of the four to balance their dependencies. Firstly, they may adapt to constraints. Secondly, they may alter interdependencies by merger or diversification. Thirdly, they may negotiate their environment by interlocking directorships/control or joint ventures. Fourthly, they may attempt, by political action, to change the legality of its environment. The importance of the resource-based view (RBV) of strategic management is manifest in its rapid diffusion throughout the strategy literature (e.g., Wernerfelt, 1984; Rumelt, 1984; Barney, 1986, 1991; Dierickx & Cool, 1989; Mahoney & Pandian, 1992). Unlike big business and corporations in which the RBV normally applies, SMEs are constrained by resource, which calls for strategic management approaches to optimize the limited resources available to them in order to grow.

2.1.2 Game Theory

Game theory is the study of the ways in which strategic interactions among rational players produce outcomes with respect to the preferences (or utilities) of those players, none of which might have been intended by any of them. Game Theory models the interaction between two or more players (Binmore, 2005). The theory attempts to create a model and to predict the outcome of a conflict between rational individuals, often with uncertainty and information asymmetry. We assume that the players are rational and that they all want to maximize their own expected utility. In game theory, each individual knows the strategies and payoffs available to everyone. However, they do not know the other players' choices of strategy. The outcome of one player affects all the other players (McMillan, 1991).

2.1.3 Agency Theory

Separation of regulation from possession infers that qualified managers manage a firm on behalf of the corporation's proprietors (Kiel & Nicholson, 2003). It is apparent that as soon as a firm's owners observe the professional managers not to be handling the business in the best interests of the owners, encounters begin. According to Eisenhardt (1989), complications arising in the affiliation between possessors or stockholders and their proxies or highest organization are scrutinized and fixed by the agency theory which relies on the postulation that the role of organizations is to make the most of the fortune of their owners or shareholders (Blair, 1995).

2.1.4 Stewardship Theory

The theory, also commonly referred to as the stakeholders' theory, on the other hand, argues contrary to the agency theory. The theory is premised on the fundamental supposition that businesses provide a broader social reason than only making the most of the wealth of shareholders. Agreeing to this, Donaldson & Preston (1995) and Freeman (1984) examine that businesses are social establishments that affect the interests of many stakeholders. Flourishing businesses are determined by their capacity to add worth for all their stakeholders. Some researchers consider the natural environment as a key stakeholder (Starik & Rands, 1995; Dunphy *et al.*, 2003). Ulrich (2008) concurs that stakeholders can be influential to corporate achievement and have ethical and legal privileges. When stakeholders realize their expectations from a company, they return to the company for more (Freeman & McVea, 2001). As such, corporate managers have to reflect on the interests of stakeholders when taking decisions and conduct production sensibly towards the

stakeholders (White, 2009). Contribution of stakeholders in corporate supervisory can augment competence (Turnbull, 1994) and diminish conflicts (Rothman & Friedman,

2.2 Conceptual Framework

2.2.1 Firm growth

Success and failure of SMEs is not only related to business environment aspect. It also depends on the firm internal factors and many more key strategic factors Entrepreneur characteristics have been extensively studied, with mixed results on his impact on small firm growth. Several studies convincingly confirmed that some characteristics have positive and significant relationships with small firm growth while other studies find insignificant relationships (Sidika, 2012). Some authors have approached their studies from the perspective of the mindset and personality of the entrepreneur (Wijewardena, *et al.*, 2008), while others have looked at it from the perspective of the entrepreneur's education, family background, and capability (Brown, 2007; Kor, 2003). A third group of scholars has considered the personal role of the entrepreneur and his growth aspirations (Pasanan, 2007; Wasserman, 2008). Ciavarella *et al.* (2004) noted that the entrepreneurs' stable and inherent characters influence how they manage their businesses. In addition, they will tend to conduct their business based on the strengths of their specific characteristics (Sidika, 2012). Many aspects have been examined regarding the characteristics of entrepreneurs, such age, gender, motivation, experience, educational background, risk taking propensity, and preference for innovation ((Pasanan, 2007; Sidika, 2012).

2.2.2 Entrepreneurial Skills

The body of entrepreneurship theories is stratified, eclectic, and divergent (Gartner *et al.*, 2013). Analysis of published entrepreneurship researches (Aldrich & Baker, 2012) show that the field generates many theories and frameworks; multiple but disconnected themes reflecting the disciplinary training and lens of their authors (Gartner *et al.*, 2013) and there exists no powerful unifying paradigm (Busenitz *et al.*, 2011). In its increasing complexities of its own, the concept of entrepreneurship skill is intertwined with a complex set of contiguous and overlapping constructs such as management of change, innovation, value creation, small business management, technological and environmental turbulence, and industry evolution. Furthermore, the phenomenon can be productively investigated from disciplines as varied as economics, sociology, finance, history, psychology, and anthropology, each of which uses its own concepts and operates within its own terms of preference (Cornelius *et al.* 2009; Low & MacMillan, 2012).

2.2.3 Franchising Agreement Terms

The International Franchise Association (IFA) (2009) has defined franchising as a contractual relationship between the franchisor and franchisee in which the franchisor offers or is obliged to maintain a continuing interest in the business of the franchise in such areas as know-how and training; wherein the franchisee operates under a common trade name, format or procedure owned by or controlled by the franchisor and in which the franchisee has made or will make substantial capital investments in his/her business from his/her own resources. The European Union commission (2010) gave one of the most compassing definitions of a franchise concept and a franchise contract in their regulations. According to this a franchise is an assembly of rights of industrial or intellectual property, concerning brands, firms, industrial designs and models,

copyright, know-how or patents meant to be exploited for selling products and performing services by final users,. The same European Union community regulation defines a franchise contract to be an agreement by which the franchisor grants another person called the franchisee the right to exploit a franchise in exchange for a direct or indirect financial compensation.

2.2.4 Profit Margins

Becchetti and Trovato (2012) opine that profit margin is not only a difference between turnover and cost it is also an indication of how efficiently the firm management extracts values from each dollar spent as cost and how it utilizes firm resources. Firms recording high profit margins are more profitable and are assumed to grow, whilst firms with lower profit margins are less successful are assumed to lose market share. Agent-based simulation modeling has since remained a dominant tool in the evolutionary literature, the backbone of which is undeniably the mechanism of „replicator dynamics“, by which growth is imputed according to profitability. Different types of profit margins are identified in literature. Operating profit margin, according to (Hobbes, 2010), is a measure of a company’s earning power from ongoing operations equal to earning before the deduction of interest payment and income taxes. Optimum profit margin; this is the right amount of profit a business can achieve. In business, this figure takes account of marketing strategy and other methods of increasing returns the competitive rate (Glancey, 2013).

2.2.5 Cost of Capital

Ang (2010) indicates that theories of capital structure were not developed with thinking SMEs in first place so they may not be directly appropriate for them. However, the validity of trade-off theory and pecking order theory for SMEs are tested empirically in many countries. In addition to size, there are two main factors that differentiate SMEs from large firms (Bhaired and Lucey, 2010). The first one is the SME owners’ desire for keeping their independence and control. The second one is the fact that SMEs are having more severe information asymmetry problems in financing decisions. These differences affect capital structure decisions of SMEs mainly in the following ways: In order to keep control, SME managers tend to reject external finance, even for projects with positive net present values (Holmes & Kent, 2011).

2.3 Empirical Review

Empirical studies on factors affecting the growth of SMEs can be roughly divided into two groups: internal factors of the firm and external factors that are beyond the SMEs’ control. In order to summarize the determinants from a wide range of perspectives, I investigate the same based on four dimensions, namely, entrepreneurial skills, franchising agreement terms, profit margins and cost of capital. These are hereby reviewed based on previous scholars’ findings.

2.3.1 Firm Growth

Different approaches to explain the factors affecting the growth of SMEs. Some of them have considered environmental and external factors to have a big impact on the performance and growth of small firm’s (Lumpkin & Dess, 1996). According to Lumpkin and Dess, (1996) the growth of SMEs are affected by its business climate. Clement *et al.*, (2004) noted that an unfavorable business climate has negative effect on small firm growth. Brown (2007) identified competition as one of the major hindrances to the growth of small firm. Davidsson (1989) noted that an unfavorable tax system, complicated rules and regulations can heavily hamper small firms’

growth. Krasniqi (2007) showed that corruption is a major source of the rise in unfair competition. He further emphasized that the cost of complying with regulations and increased tax rates increases small firms' expenses while limiting their growth. Likewise, St-Jean *et al.* (2008) noted that unfair competition from the informal sector, cumbersome regulations, and tax rates are the main obstacles on small business growth.

2.3.2 Entrepreneurial Skills

Lichtenstein and Lyons (2011) argued that it is important for service providers to recognize that entrepreneurs come to entrepreneurship with different levels of skills and therefore each entrepreneur requires a different „game plan“ for developing his or her skills. Furthermore, they suggested that skill development is a qualitative, not quantitative, change which demands some level of transformation on the part of the entrepreneur. Kutzhanova *et al.* (2009) examined an Entrepreneurial Development System located in the Appalachian region of USA and identified four main dimensions of skill: Technical Skills - which are those skills necessary to produce the business's product or service; managerial Skills, which are essential to the day-to-day management and administration of the company; entrepreneurial Skills - which involve recognizing economic opportunities and acting effectively on them; personal Maturity Skills - which include self-awareness, accountability, emotional skills, and creative skills.

In examining the key skills required of entrepreneurs, O'Hara (2011) identified a number of key elements which he believed featured prominently in entrepreneurship: the ability to identify and exploit a business opportunity; the human creative effort of developing a business or building something of value; a willingness to undertake risk; and competence to organise the necessary resources to respond to the opportunity.

2.3.3 Franchising Agreement Terms

An argument that speaks for the concept is the positive relationship between GDP per capita and franchising. Magleby (2013) stated that there is a direct relationship between the degree of penetration of the franchise business model and the level of economic prosperity in that country. Magleby collected his statistics from the National Franchise Associations of the respective countries and compared them to the GDP per capita. He stated that in the United States with a GDP per capita of \$41,800 has 15000 franchise operations, Spain with \$25,100 ; 2500, and Malawi \$600 ; 5 all have GDP per capita and franchise operations respectively. His argument was debunked by Welsch (2012) admitted that though there could be a relevant correlation between GDP per capita and franchise operations, he felt the correlation could be more appropriate by comparing the number of franchised operations with purchasing power parity (PPP). He further added that it would be more important to use GDP per capita PPP when

„considering an emerging“ market in order to analyze the real cost of living.

2.3.4. Profit Margins

Norton (2012) proposes that if the definition of entrepreneurship is taken as the creation of rents through innovation where rents are defined as average earnings relative to competitors, then profit margin measures are particularly appealing. This also implies that economic success is required by high performance firms. Alternative views are given by Delmar *et al.* (2013), who point out that while profit margins are an important indicator of success, the relationship of profits to size is only

evident in aggregate of firms or over long periods for individual firms. Marris (2009) considered the relationship between these measures and suggests that there is an identifiable growth profit trade-off, where in order to finance growth, the firm must forego profits. Cowling (2012) investigated this relationship between growth and profitability and found little evidence of the growth versus profit trade-off. He suggested that there is potential for a cumulative type effect whereby profits engender growth and growth engenders future profit that allows some firms to continually face increasing returns to scale.

2.3.5 Cost of Capital

SME capital structure and particularly the concept of cost of capital have over the years received immense scholarly attention. Coluzzi *et al.*, (2011), found that young and/or small firms in principle grow faster than larger and older firms. At the same time, they also face considerably more severe financing restrictions than other firms, most severe of which, high cost of capital. Also, firms of the manufacturing and construction sectors are more likely to feel financing constraints, which may be attributable to the high capital intensity of these sectors. As could be expected, increased sales which reflect better success of the chosen business model – lessen financing constraints. Huyghebaert (2010) argues that higher cost of capital creates incentives for an entrepreneur to maximize short-term earnings in order to reduce the risk of adverse credit decisions by lenders and possibly resulting liquidation of the firm, since firm survival is a crucial consideration for entrepreneurs who typically hold a largely undiversified investment portfolio and enjoy sizeable private benefits from control. The positive effect of higher leverage on profitability is empirically confirmed for start-up firms in Belgium. This positive effect of leverage is also found to persist, albeit growing at a declining rate, as firms age.

3.0 METHODOLOGY

This study took the descriptive research design. The target population for the study was all the MSEs in the Kenyan petroleum sector, based in Nairobi County. To narrow down the scope however, the study drew respondents from senior corporate members listed by the Petroleum Institute of East Africa (PIEA). PIEA currently lists 7 senior corporate members; from whose petrol station outlets the study generated a desired sample size. The researcher used stratified random sampling to select the respondents. The strata in this case are the 7 members listed by PIEA as well as the three management levels from which individual respondents were drawn, that is, top, middle and lower cadre. The sample size was 134 respondents calculated using the formula.

$$n_f = \frac{n}{1 + n/N}$$

n_f is the desired sample size when population is less than 10,000 n

n is the desired sample size when population is more than 10,000

$$n_f = \frac{384}{1 + 384/206} = 134$$

Structured questionnaires were used in data collection. The questionnaires were administered through a drop and pick later method because of the busy schedule of the target respondents. This

reduced the level of interference with the daily duties and operations of the organization. Content validity which was employed by this study as a measure of the degree to which data collected using a particular instrument represents a specific domain or content of a particular concept.

The content validity of the research instrument was evaluated through the actual administration of the pilot group. The study used both face and content validity to ascertain the validity of the questionnaires. Face validity is actually validity at face value. As a check on face validity, test/survey items were sent to the pilot group to obtain suggestions for modification. The survey instruments were subjected to overall reliability analysis. To this end, a 0.7 Cronbach alpha level of reliability was deemed reliable (Cronbach, 2001).

After data collection, the filled-in and returned questionnaires were edited for completeness, coded and entries made into Statistical package for social sciences (SPSS version 22). This ensured that the data are accurate, consistent with other information, uniformly entered, complete and arranged to simplify coding and tabulation. With data entry, the data collected was captured and stored. Both descriptive and inferential statistics were further conducted. Descriptive analysis involved the use of frequencies in their absolute and relative forms (percentage). Mean and standard deviations were also used as measures of central tendencies and dispersion respectively. Inferential statistics were on the other hand be done to show the nature and magnitude of relationships established between the independent and dependent variables using regression analysis to make inferences from the data collected to more generalized conditions.

4.0 DATA ANALYSIS AND PRESENTATION

4.1 Response Rate

The study achieved a response rate of 83.6% with 112 respondents reached, out of the 134 targeted. According to Mugenda and Mugenda (2003), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. The study therefore attained an excellent response rate as presented in table 1.

Table

1 Response rate

Questionnaires	Frequency	Percent (%)
Returned	112	83.6
Unreturned	22	16.4
Distributed	134	100.0

4.2 Reliability Test Results

A pilot study was carried out in order to determine reliability of the questionnaires. Reliability of the questionnaires was then evaluated through Cronbach's Alpha which measures the internal consistency. The Alpha measures internal consistency by establishing if certain item measures the same construct. Nunnally (1978) established the Alpha value threshold at 0.7 which the study benchmarked against. Cronbach Alpha was established for every objective in order to determine if each scale (objective) would produce consistent results should the research be done later on. Table 2 presents the findings.

Table 2 Reliability Coefficients

Scale	Cronbach's Alpha	Number of Items
Entrepreneurial skills	0.811	10
Franchising agreement terms	0.778	10
Profit margins	0.819	10
Cost of capital	0.833	10
Growth	0.792	4

The reliability test results in table 2 shows that all the scales were significant, having an alpha prescribed threshold of 0.7. Cost of capital had the highest reliability ($\alpha=0.833$) followed by Profit margins ($\alpha=0.819$), then Entrepreneurial skills ($\alpha=0.811$), while Growth and Franchising agreement terms had the lowest, albeit significant, at 0.792 and 0.778 respectively. The study thus found that the analysis was reliable and could be used for further investigation.

4.3 MSE Growth

This section presents findings to survey questions asked with a view to establish the level of growth among petroleum sector MSEs experienced over the last 5 years. In this regard, respondents were further asked to provide the actual figures averages of which are presented in table 3.

Table

Growth Area	Period				
	2011	2012	2013	2014	2015
3 MSE Growth					
Number of employees	12	12	13	14	
Number of stations	2	2	2	2	
Gross sales	225,270,550	229,762,628	237,784,880	236,398,200	244,885,600
Net profit	92,367,150	108,249,700	114,202,800	123,506,120	131,184,920

As illustrated in table 3, on average, a majority of MSEs surveyed have grown over the last 5 years, with respect to the number of employees, gross sales and net profit. On the number of employees, a majority of MSEs were found to exhibit slow growth, stagnating at an of average of 12 employees from the year 2011 and 2013 to an average of 13 in the year 2014 and peaking at 14 in 2015. It was also established that the average number of stations remained 2 across the 5 year period while a steady growth was further generally exhibited in gross sales, increasing from an average of Kshs225,270,550 in 2011 to Kshs229,762,628 in 2012 then to Kshs237,784,880 in 2013. A slight drop was however experienced in 2014 at Kshs236,398,200 then peaked at Kshs244,885,600 in 2015. There was also an exponential growth in net profit from Kshs92,367,150 in 2011 to peak at Kshs131,184,920 in the year ending, 2015. It can be deduced from the finding that whereas a majority of MSEs have considerably grown over the last five years in all respects including the number of employees, number of stations, gross sales and net profit, the growth has been largely slow and unstable characterized by declines in between the years, as regards gross sales and net profits. This may be attributed to among other factors, regularly changing oil prices and therefore operating costs as well as inadequate business strategy.

4.4 Entrepreneurial Skills

As presented in table 4, with a composite mean of 3.665, a majority of respondents highly agreed with most of the statements posed.

A majority particularly agreed that in their firms, the management believes that becoming successful is a matter of hard work not luck (3.934); hires employees based on their ability (3.815); exhibits aggression for business opportunities (3.786); encourages creativity among employees (3.757); emphasizes on accountability for underperformance (3.754); can spot a good opportunity long before others can (3.699); exhibits support for new ideas (3.692); excels at identifying opportunities (3.657); greatly invests in new ventures (3.534); and reviews mistakes made and takes notes to avoid a repeat (3.519). As such, it can be deduced that a majority of the MSEs

Table

surveyed are driven by entrepreneurship skills among their management. This can be noted in among other attributes, that the managements believe that becoming successful is a matter of hard work not luck; hire employees based on their ability; exhibit aggression for business opportunities; encourage creativity among employees; and emphasize on accountability for underperformance.

4 Descriptive Statistics for Entrepreneurial Skills

In this firm, the management:

	N	Mean	Std. Dev
Believes that becoming successful is a matter of hard work not luck	324	3.934	.9915
Hires employees based on their ability	324	3.815	1.1936
Emphasizes on accountability for underperformance	324	3.754	.7026
Reviews mistakes made and takes notes to avoid a repeat	324	3.519	.9607
Exhibits aggression for business opportunities	324	3.786	.6580
Can spot a good opportunity long before others can	324	3.699	.6108
Excels at identifying opportunities	324	3.657	.8762
Exhibits support for new ideas	324	3.692	.6436
Greatly invests in new ventures	324	3.534	.9915
Encourages creativity among employees	324	3.757	.8762
Composite mean		3.665	

4.5 Franchising Agreement Terms

With a composite mean of 3.683, a majority of respondents were found to highly agree with most of the statements posed. A majority particularly highly agreed that in their respective firms, franchise holding earns the firm competitive advantage (3.992); increases the firm's business opportunities (3.901); helps the firm cut on marketing costs (3.848); increases opportunities for financing (3.770); enhances the firm's access to established standard procedures (3.732); enhances the firm's network (3.644); reduces risk of failure (3.642); and enhances the firm's negotiation capacity (3.611). A majority however only moderately agreed that franchise holding enhances the firm's profitability through royalties (3.215); and that it improves employee development through training (3.028). From the findings, it can be deduced that franchise holding significantly influences firm growth through a variety of attributes including earning the firm competitive advantage; increasing the respective firms' business opportunities; helping the firm cut on marketing costs; increasing financing opportunities; enhancing firms' access to established

Table

standard procedures; enhancing firms' network; reducing risk of failure and enhancing firms' negotiation capacity. Results are presented in table 5.

5 Descriptive Statistics for Franchising Agreement Terms

In this firm, franchise holding:	N	Mean	Std. Dev
Reduces risk of failure	324	3.642	.6895
Helps the firm cut on marketing costs	324	3.848	.8457
Increases opportunities for financing	324	3.770	.7554
Enhances the firm's profitability through royalties	324	3.215	.9660
Enhances the firm's network	324	3.644	.9703
Earns the firm competitive advantage	324	3.992	.7225
Improves employee development through training	324	3.028	1.2549
Increases the firm's business opportunities	324	3.901	1.2371
Enhances the firm's access to established standard procedures	324	3.732	1.2944
Enhances the firm's negotiation capacity	324	3.611	1.2637
Composite mean		3.638	

4.6 Profit Margin

A majority of respondents were found to affirm to a great extent (3.541) to most statements posed with regard to profit margin and the influence thereof on respective MSE growth.

Table 6 Descriptive Statistics for Profit Margin

	N	Mean	Std. Dev
Increase in sales	324	3.892	.7965
Increase in return on investment	324	3.923	.6632
Increase in stock levels	324	3.235	.9267

Table

Increase in retained earnings	324	3.076	.5923
Increase in profitability	324	3.955	2.8633
Increase in inventory turnover rate	324	3.839	1.3229
Revenue earnings	324	3.812	1.2192
Reduced operating costs	324	3.191	1.1927
Reduced cost of goods sold	324	2.730	1.0652
Net income	324	3.754	1.3282
Composite mean		3.541	

Further, a majority of respondents were particularly found to affirm to a great extent, increase in profitability (3.955); increase in return on investment (3.923); increase in sales (3.892); increase

in inventory turnover rate (3.839); revenue earnings (3.812); and net income (3.754). A majority of respondents however only affirm to a moderate extent, to increase in stock levels (3.235); reduced operating costs (3.191); increase in retained earnings (3.076); and reduced cost of goods sold (2.730). It follows then from the findings that profit margin has considerably influenced the established firm growth across a majority of the MSEs surveyed, most notably through increased profitability, increased return on investment, increased sales, increased inventory turnover rate and revenue earnings as well as net income.

4.7 Cost of Capital

With a composite mean of 3.660, a majority of respondents were found to affirm to a great extent to most statements posed, as regards the effect of cost of capital on the growth of petroleum sector MSEs in Nairobi County. More particularly, a majority of respondents affirmed to a great extent, service tax (3.929); interest charges (3.923); irregular cash flows (3.898); uncertainty about capital amount (3.854); prepayment charges (3.719); mismatch of funds (3.701) and loan size (3.661). A majority however affirmed to a moderate extent, loan processing charges (3.354); asset base (3.451); appraisal costs (3.426); and term to maturity (3.348). It can be deduced from the findings that cost of capital moderately influences growth across a majority of MSEs reached most notably through service tax, irregular cash flows, interest charges, prepayment charges, loan size, asset base and mismatch of funds.

Table 7 Descriptive Statistics for Cost of Capital

	N	Mean	Std. Dev
Interest charges	324	3.923	.8923
Loan processing charges	324	3.354	.7460
Term to maturity	324	3.348	.7614
Appraisal costs	324	3.426	.8898
Uncertainty about capital amount	324	3.854	.7460
Irregular cash flows	324	3.898	.7614
Mismatch of funds	324	3.701	.9062
Loan size	324	3.661	.7430
Asset base	324	3.451	.7579
Prepayment Charges	324	3.719	.8878
Service tax	324	3.929	.7819
Composite mean		3.660	

4.8 Pearson Correlation Analysis

Table 8 presents the Pearson correlations for the relationships between the determinants and MSE growth in Kenya's petroleum sector.

Table 8 Pearson Correlation Matrix

	MSE growth	Profit margin	Cost capital	Franchising of agreement terms	Entrepreneurial skills
MSE growth	1				
Entrepreneurial skills	.798** .000	1			
Franchising agreement terms	.636 .004	.650** .000	1		
Profit margin	.708 .000	-.485** .001	-.115 .474	1	
Cost of capital	.716** .000	-.724** .000	-.300 .057	.692** .000	1

*Correlation is significant at the 0.01 level (2-tailed)

From the findings, a positive correlation is seen between each determinant and MSE growth. The strongest correlation was obtained between entrepreneurial skills and MSE growth ($r = .798$) and the weaker relationship found between Franchising agreement terms and MSE growth ($r = .636$). Cost of capital and Profit margin are also strongly and positively correlated with MSE growth at correlation coefficient of .716 and .708 respectively. All the independent variables were found to have a statistically significant association with the dependent variable at 0.01 level of confidence.

4.9 Regression Analysis

To establish the degree of influence of the various determinants and MSE growth in Kenya's petroleum sector, regression analyses were conducted among the variables, with the assumption that: variables are normally distributed to avoid distortion of associations and significance tests, which was achieved as outliers were not identified; a linear relationship between the independent and dependent variables for accuracy of estimation, which was achieved as the standardized coefficients were used in interpretation.

Regression analyses produced the coefficients of determination and Analysis Of Variance (ANOVA). Analysis of variance was done to show whether there is a significant mean difference

between dependent and independent variables. The ANOVA was conducted at 95% confidence level. Table 9 presents the findings.

Table 9 Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.865 ^a	.748	.720	1.94285

a. Predictors: (Constant), Entrepreneurial skills, Franchising agreement terms, Profit margin, Cost of capital

ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	402.892	4	100.723	26.684	.000 ^a
	Residual	135.888	36	3.775		
	Total	538.780	40			

a. Predictors: (Constant), Entrepreneurial skills, Franchising agreement terms, Profit margin, Cost of capital

b. Dependent Variable: MSE growth

Coefficients^a

Model B	Unstandardized Coefficients	Std. Error		Standardized Coefficients	t	Sig.
1	(Constant)	8.001	.084		94.878	.000
	Entrepreneurial skills	2.435	.867	.421	2.809	.008
	Franchising agreement terms	.336	.112	.353	3.011	.005
	Profit margin	.610	.998	.099	.611	.007
	Cost of capital	1.576	.905	.205	1.742	.015

a. Dependent Variable: MSE growth

The result showed a coefficient of determination value (R) of .865^a which depicts that a strong linear dependence between all the influencing strategies and MSE growth. With an adjusted Rsquared of .720, the model shows that Entrepreneurial skills, Franchising agreement terms, Profit margin and Cost of capital collectively explain 72.0% of the variations in the MSE growth while 28.0% is explained by other factors not included in the model. The P-value of 0.000 implies that the MSE growth has a significant joint relationship with Entrepreneurial skills, Franchising agreement terms, Profit margin and Cost of capital which is significant at 90% confidence level. This implies that the regression model is significant and can thus be used to assess the association between the dependent and independent variables. The optimal model was;

$$MSE\ growth = 8.001 + 2.435 (Entrepreneurial\ skills) + .336 (Franchising\ agreement\ terms) + .610 (Profit\ margin) + 1.576 (Cost\ of\ capital) + .084$$

A unit change in the increase of Entrepreneurial skills, Franchising agreement terms, Profit margin and Cost of capital would lead to a unit change of MSE growth by the units indicated against them.

5.0 STUDY CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

From the foregoing results and discussions thereof, the following conclusions can be drawn. The study first hereby deduces that whereas a majority of MSEs have considerably grown over the last five years in all respects including the number of employees, number of stations, gross sales and net profit, the growth has been largely slow and unstable characterized by declines in between the years, as regards gross sales and net profits. This may be attributed to among other factors, regularly changing oil prices and therefore operating costs as well as inadequate business strategy. It is also deduced that a majority of the MSEs surveyed are driven by entrepreneurship skills among their management. This can be noted in among other attributes, that the managements believe that becoming successful is a matter of hard work not luck; hire employees based on their ability; exhibit aggression for business opportunities; encourage creativity among employees; and emphasize on accountability for underperformance.

The study further deduces that franchise holding significantly influences firm growth through a variety of attributes including earning the firm competitive advantage; increasing the respective firms' business opportunities; helping the firm cut on marketing costs; increasing financing opportunities; enhancing firms' access to established standard procedures; enhancing firms' network; reducing risk of failure and enhancing firms' negotiation capacity.

The study also concludes that profit margin has considerably influenced the established firm growth across a majority of the MSEs surveyed, most notably through increased profitability, increased return on investment, increased sales, increased inventory turnover rate and revenue earnings as well as net income. Finally, it is hereby deduced that cost of capital moderately influences growth across a majority of MSEs reached most notably through service tax, irregular cash flows, interest charges, prepayment charges, loan size, asset base and mismatch of funds.

5.1 Recommendations

The research recommendations are as follows: The impact of the rising petrol price study on the cash flow and profitability of service stations must be addressed as an urgent matter; otherwise it might lead to some service stations being closed in the near future. It will be advisable in future to form one unity body for service station retailers. This national body which will represent all retailers from all petroleum companies will give them a platform and voice and negotiation power on issues like retailer margins.

In future, all service station retailers may need to undergo similar training programmes irrespective of the background. This should be viewed as entry qualification to operate a service station, which will ultimately result in improved quality and standardised service level. The retailer margin should be standard percentage of the final price, not a fixed amount which diminishes as the percentage of the pump petrol when price increases. This ultimately results in service station retailers financing the difference until the motorists purchase the petrol. The Kenyan government should examine the taxes on the petrol price to ascertain if some are still relevant today.

The Kenyan government should look into the possibility of introducing deregulation of the petrol price. It can be done in the following matter to protect job losses of petrol attendants: Petrol price cap for a particular zone; and Zone price difference to be small for sites in areas between zone boundaries. This will allow minimal competition between the retailers, and customers will have a choice to compare. Issues like service will add value to the customer prepositions before deciding which service station to fill-up. Retailer service station will be able to secure bulk customers in account like fleet vehicles which will boost their profitability levels in the long run.

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