FACTORS AFFECTING PERFORMANCE OF MANUFACTURING FIRMS IN KENYA: A CASE OF HARMACEUTICAL FIRMS IN NAIROBI COUNTY

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ABSTRACT
The global manufacturing scene has experienced rapid changes over the last one or two decades. This is a key variable in the growth of the Kenyan economy. Much of the developing countries in world are experiencing rapid economic growth. The manufacturing sector aims to generate revenue and growth in Kenya. The Kenya Economic Survey of 2015 estimated that the contribution to the GDP by the manufacturing sector stands at 11% which explains the favorable environment policies and campaigns in place to encourage the growth of the sector. There are top major classes of the resources that influence performance of manufacturing firms which are financial resources and human resources. Various types of technology can be used to achieve manufacturing organization goal or objective. A manufacturing firm would be able to create value through a strategic alliance that the firm could not create on its own. The purpose of this study was to evaluate challenges facing performance of manufacturing firms in Kenya. The objectives of the study were to establish how resource constraints and ICT on the performance of manufacturing in Kenya. The study adopted a descriptive design to explain the interaction between the determinant variables and performance of manufacturing firms in Kenya. The study targeted employees of registered pharmaceutical manufacturers in Nairobi County. Primary data was collected using structured questionnaires which were dropped and picked later and covered all the objectives of the study with a sample size of 252. The data was then analysed by use of SPSS V 21. In regard to information communication technology the study concluded that it positively and significantly affected performance of Pharmaceutical manufacturing industry in Kenya. The study deduced that the manufacturing firm that engaged in online Services would boost its competitive edge and that adequate infrastructure innovation of a manufacturing firm increased its market share. Therefore the study recommended that Pharmaceutical manufacturing industry in Kenya should integrate information communication technology. This would assist in advertisement where the firm was able to make the public aware of the existence of their products and also enhance online promotions for their goods hence improving the performance of the firm.

Key Words: Resource Constraints, Information Communication Technology, Performance
INTRODUCTION
The manufacturing scene has experienced rapid changes over the last two decades and this has driven manufacturing firms to respond to uncertainty more rapidly. Thus, emerging of world class competitors in domestic and international business require manufacturing firm to revamp their processes to fulfill market needs. Therefore, fundamental goal of manufacturing firm’s corporate and functional level strategies is the development of sustainable competitive advantage (Hitt, Hoskisson & Ireland, 2007). Thus, shifting exploration from conventional way of thinking to strategic thinking as one of the core elements enable organization to equip well in order to wave through competition (Giunipero, Handfield & Eltantawy, 2006).

The manufacturing industry today is in a state of metamorphosis with contemporary issues such as customer satisfaction, competitive advantage, revenue and expenditures, organizational culture, technological advancement, global markets, diverse customer demands and need for effective workforce with a global mindset penetrating every aspect of the organization. For a long time, manufacturing firms in the world have been taking advantage of, and spending money and trusting external providers of competitive services in order to offer cost effectiveness and efficiency of internal resource procedures. This is particularly important for organizations, which are considered as important players in the manufacturing sector in any country because of the economic benefits they provide in their economic environment (Nzioka, 2013).

There has been a realization that manufacturing is the lifeblood of an economy because of the critical role it plays in a country’s long-term prosperity (Owwooth, 2010). The financial crisis delivered a body blow to the manufacturing sector from which it is still recovering. A closely watched survey of manufacturing managers, shows that activity in the sector slowed over the summer of 2010 after returning to growth in late 2009. Worries over the scale of national deficits, and the spending cuts needed to bring government finances back into balance hang over the sector (Owwooth, 2010). Africa’s manufacturing sector has been transformed over time, reflecting changes in national policies, varying domestic demand and the world market dynamics. Importance of the manufacturing sector to the national economies of the Africa countries has varied across different periods since independence, however, in the recent years its contribution to the national income and hence its importance has been on the rise. Industrial structure, policy, output composition and magnitude have experienced notable changes over time in Africa region. Although manufacturing is usually a small sector in African economies, in terms of share of total output or employment, growth of this sector has long been considered crucial for economic development.

The manufacturing sector in Kenya grew at 3.5% in 2015 and 3.2% in 2014, contributing 10.3% to gross domestic product (GDP) (KNBS, 2016). On average, however, manufacturing has been growing at a slower rate than the economy, which expanded by 5.6% in 2015. This implies that the share of manufacturing in GDP has been reducing over time. As a result, it can be argued that Kenya is going through premature deindustrialization in a context where manufacturing and industry are still relatively under-developed. Kenya seems to have ‘peaked’ at a point much lower than in much of Asia (Phillips, 2009).

The pharmaceutical industry in Kenya consists of local manufacturers, franchise importers who are involved in distribution, multinational companies, wholesalers and retailers and all these play a major role in supporting the country’s health sector which is estimated to have about 4758 health facilities country wide (Pharmaceutical society of Kenya, 2016). It is also approximated that about 9,000 pharmaceutical products have
been registered for sale in Kenya. These are categorized according to particular levels of outlets as: free, over the counter sales, pharmacy technologist, dispensable or pharmacist dispensable.

**Statement of the Problem**

Many Manufacturing firms have relocated or restructured their operations opting to serve the local market through importing from low-cost manufacturing areas such as Egypt, South Africa and India therefore resulting in job losses (Nyabiage & Kapchanga, 2014). This is an indication that many manufacturing firms in Kenya are experiencing performance challenges with many reporting profit warnings due to challenges in the operating environment (RoK, 2015). Statistics from World Bank show that manufacturers operate in Kenya registered stagnation and declining profits for the last five years due to a turbulent operating environment (WB, 2015). Manufacturing sector in Kenya contributed barely 13.6 per cent to the GDP in the year 2016 indicating a decline from the previous year 2015 where it had reported a 5.6 per cent growth (KNBS, 2016).

There are 307 local pharmaceutical manufacturing industries actively manufacturing generic drugs for local and export market. Despite this, the country still relies heavily on imported drugs to service the public health needs. In 2015, the country imported $809 million worth of drugs. In the same year, donor communities spent an additional $693 million to purchase drugs for pandemic diseases including malaria, tuberculosis and HIV (WHO, 2016). The local pharmaceutical industries only managed to access 30% government and private sector spending in the pharmaceutical market and almost none from the donor communities.

Kenya Vision 2030 emphasizes the need for appropriate manufacturing strategy for efficient and sustainable practices as a way of making the country globally competitive and a prosperous nation (RoK, 2015). The pharmaceutical industry in Kenya has been characterized by many changes and an increasingly turbulent environment. The configuration of competitive forces such as intensity of competition, new entrants, substitute products and supplier and buyer power have transformed the environment a great deal, creating the need for firms to change their competitive positions (Mungai, 2009). Muthiani and Wanjau (2012) postulate that the increased number of fake drugs in pharmaceutical industry in Kenya, is due to poor legislation and brand popularity. Nevertheless, most manufacturing firms in Kenya operate at a technical efficiency of about 59 percent that average about 74 percent (Achuora, Guyo, Arasa & Odhiambo, 2015) raising doubts about the sector’s capacity to meet the goals of Vision 2030 (RoK, 2015). From the ongoing discussion, the need to understand the factors affecting performance of the manufacturing industry could not be overstated. This study therefore sought to find out the challenges affecting the performance of the manufacturing industry in Kenya.

**Study Objectives**

The general objective of this study was to evaluate challenges facing performance of manufacturing firms in Kenya. The specific Objectives were:-

- To determine the influence of resource constraint on the performance of Pharmaceutical manufacturing industry in Kenya.
- To examine the influence of ICT on the performance of Pharmaceutical manufacturing industry in Kenya.

**LITERATURE REVIEW**

**Theoretical Review**

**Resource-Based View**

How a manufacturing firm controls its key resources will determine its performance (Kraijenbrink, Spender & Groen, 2010). The focus of the RBV is on attributes of resources and capability from the source they are gained to clarify a firm’s heterogeneity, performance and
sustainability. Further, resources are substances of approach in that gaining dominance in an aggressive marketplace is dependent on firm capability to recognize, build up, position and safe guard meticulously resources that differentiate it from its competitors (Kraaijenbrink, Spender & Groen, 2010).

Katz and Green (2009) noted that every firm owns a diverse outline of tangible and intangible resources. Barney is one of the late contributors of RBV who studied and established the existence of key firm resources for superior performance. The theory of RBV assumes that individuals are inspired to make maximum use of economic resources available and rational choices that a firm makes which are shaped by economic framework (Barney, 2007). Resource Based View theory in this study played a role of evaluating and explaining resources and capability of a firm that have the capability to create and maintain a firm’s advantage and thus higher performance among the mobile phone industries in Kenya (Sheehan & Toss, 2007). Complex packages of skills, obtained knowledge, ability and experience that facilitate the company to manage activities of the firm and make use of resources to create performance through coordinating and putting resources into proper production use is what define capability (Mckelvie & Davidsson, 2009).

According to Lockett, Thompsons and Morgensrern (2009) on strategic management, RBV scrutinizes the resources and abilities that facilitate how the firm will produce above the ordinary rates of return and higher performance benefits.

Resource Based View allows executives of the organization to choose the most important strategic factors to invest in from a given range of probable strategic factors in the mobile telephone industry. Barney and Hesterly (2010) advanced that resources in general include the following key constructs: resources, capabilities and competences. In strategic management literature, resources are defined as stocks of accessible things that are possessed by the firm. Competencies are the firm’s strengths that enable it to better differentiate its products or service quality by building technological system to respond to customers’ needs, hence allowing the firm to compete more efficiently and successfully than other firms (Arend & Levesque, 2010).

For a manufacturing firm to have superior performance, resources and capabilities have to qualify as exceedingly valuable, rare, inimitable, and non-substitutable. Resources that are valuable add to advancing the firm’s performance. Rareness creates ideal competition in view of the fact that resources in that category are possessed by fewer firms. Inimitable resources are costly to duplicate and non-substitutable, meaning that there is no alternative to accomplishing an equal function instantly available to competitors (Barney &Hesterly, 2010). Tangible resources are physical substances that an organization possesses such as facilities, raw materials and equipment. Intangible resources include corporate brand name, organizational values, networks and processes that are not included in normal managerial-accounting information. Intangible resources are more likely to generate competitive advantage and superior performance as compared to tangible resources (Kenneth at el., 2011).

**Technology Acceptance Model (TAM)**

The technology acceptance model (TAM) is an information systems theory that models how users come to accept and use a technology. The theory has an implication that for a manufacturing firm to have a better performance than its opponents, then it must adopt and make use of complicated ICT which cannot be duplicated by competitors for product development, use swiftness of combination of original technologies, and proactively expand new technologies in creating novel, valuable and distinctive product ideas. In addition, the firm’s technical skills, research and development resources and
technological stand appear to be critical in passing originality and better deliberated products into the market, hence the firm’s superior performance (Hakala, 2011). Technology-oriented manufacturing firms emerge to have the capability and will to obtain advanced technological setting, and such firms hold the idea that innovation is a strategy for superior performance.

The theory has further implication that for technology-oriented firms to achieve superior performance, then they should apply technical ability to produce new products in the market to cope with competition, flexible products so as to change with changing needs of customers and be able to maintain them, and originality in developing original products, services and processes which are unique and difficult to imitate. Anal, Dionysis and Carmen (2011) found out that customers choose technologically superior products and services and that customers stick to a firm that has the capability to react to their choices in a successful way.

Technological competence is viewed as the principal means of a manufacturing firm to create product differentiation which will end up being unique to a specific firm and promote product designs that are not beyond those of competitors. Manufacturing firms which use technological-oriented strategy are in support of a strong research and development department, acquisition of new technologies and application of the most recent technologies which enhance superior turnovers and be difficult to be copied by competitors (Slater et al., 2012). The theory has an implication that for a firm that invest in technology to maintain its superior performance, it should focus on engaging in the search for new market opportunities and rebuilding of existing areas of operations to keep on producing unique products.

**Conceptual framework**

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**Figure 1: Conceptual framework**

**Resource constraints**

According to Ayoade (2015), managing manufacturing operations is akin to playing symphony with people, systems and processes. As long as these elements are balanced and in harmony the operations go on smoothly and efficiently. Resources are very important assets of manufacturing operations (Bouquin, 2014). Resources can be the strongest and the weakest link to manufacturing performance. Even in a highly automated and system controlled design, manufacturing operations are heavily dependent upon personnel and infrastructure to help run and manage operations (Harmon, 2013). According to Budugan and Georgescu (2009), there are top major classes of the resources that influence performance of manufacturing firms which are financial resources and human resources.

Financial resources are the money that is used to boost the operation of manufacturing firms. According to Ango (2008), financial shortage is a major limitation to any manufacturing firm. Some organizations that venture into manufacturing business do not have sufficient capital or funds to boost their business. In some cases even where credit is available the owner or manager may lack freedom of choice because the lending conditions
may force the purchase of heavy, immovable equipment that can serve as collateral for the loan. Credits constrains operates in variety of ways in Kenya where undeveloped capital market forces entrepreneurs in the manufacturing sector to rely on self-financing. This has caused them to rely on high cost short term finance (Wanjohi & Mugure, 2008).

Human resource is the availability of skills, talent and know-how of employees that is required to perform the everyday tasks that are required by the manufacturing firm’s strategy. It is the value that the employees of manufacturing business provide through the application of skills, know-how and expertise (Drury, 2015). Human resource is inherent in people and cannot be owned by the manufacturing organization. Therefore, it can leave an organization when people leave it also encompasses how effectively an organization uses its people resources as measured by creativity and innovation (Emmanuel, 2014). Without competent people both in managerial and employee positions, manufacturing organizations will not be able to accomplish their goals. This means that the manufacturing firm will not be on a competitive edge with other firms in other industries (Mugo, 2010).

Bouquin (2014) suggests that the manufacturing organization’s employees can determine the ultimate success of their organizations given the importance of people in the manufacturing organizations; most strategic human resource departments consider the management of the competencies and capabilities of these human assets the primary goal. Emmanuel (2014) argues that effective human resource management will generate a higher capacity to attract and hold employees who are qualified and motivated for good performance, and also the benefits from having adequate and qualified employees are numerous. According to Khan (2010), manufacturing departments tend to employ progressive human resource practices in which the emphasis is on assessing the knowledge, skills and abilities needed for the future and to institute staffing, appraisal and evaluation, incentive and compensation, and training and development programmes to meet those needs.

Buracket al. (2014) suggests several ways that manufacturing organizations can maintain high commitment and high performance among employees and ultimately organizational effectiveness thus attaining competitive advantage. Employees are arguably the most valuable resource manufacturing company possesses and it is widely accepted that employee exposure and experience are positively linked to firms’ performance aimed at improving its competitive advantage (Hasanali, 2012).

Entrepreneurship in developing countries is arguably the least studied significant economic and social phenomenon in the world today (Reynolds et al., 2004). However, enterprise development is almost universally promoted in developing countries, and is often justified on the grounds that the emergence of entrepreneurs is an important mechanism to generate economic growth (Fairoz, Hirobumi & Tanaka, 2010). Contemporary entrepreneurship stresses the importance of a new entry for business innovation referring to the process of creative destruction (Schumpeter, 2009). Miller and Hatcher (2014) clarify the construct of entrepreneurial orientation and define an entrepreneurial firm as one that “engages in product marketing innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch.” According to Miller firms are entrepreneurial if they are innovative, risk taking, and proactive.

Today’s dynamic, global, and challenging business environment requires a firm to be entrepreneurial if it is to survive and grow. Runyan et al. (2008) examined entrepreneurial orientation (EO) versus
Small Business Orientation (SBO), and their impact on small business performance, as well as whether these effects are moderated by longevity of manufacturing firms in USA. Firms are grouped based on the age as younger and older firms. Findings revealed that EO and SBO are unique constructs and performance is not the same in these groups: for the younger group, only EO significantly predicts performance while for the older group, only SBO significantly predicts performance.

Information Communication Technology
According to Kuratko and Hodgell (2011), ICT choice has important implication for growth and productivity in manufacturing industry. The use of information communication technology is always tied to an objective. Because of various types of technology can be used to achieve manufacturing organization goal or objective, the issue of choice arises. Moustafa, (2010), asserted that effective choice is based on pre-selected criteria for an ICT’s meeting specified. Further, it also depends on the ability to identify and recognize opportunities in different technologies. The expected outcome is that the firm will select the most suitable or “appropriate” technology in its circumstances. According to Harper (2007), ICT used by manufacturing industry in developing countries may be inappropriate because their choice is based on insufficient information and ineffective evaluation(Oghojafor, 2008).

According to Rof (2012), companies that do not embrace technological advancement have faced stiff competition and sometimes even remain irrelevant for instance Telekom Kenya was the leading communication industry in Kenya technological advancement and the fact that Safaricom remains at the top of technology has seen Safaricom remain the market leader in communication in Kenya. An organization may strive to achieve a state of perfect alignment in order to achieve maximum competitive advantage (Elms & Low, 2013).

Demands for innovation and technological advancement are increasingly crucial components of profitability for many manufacturing firms (Sani & Allah, 2012). Most manufacturing companies face serious competitive challenges due to the rapid pace and unpredictability of technology change and failure to utilize innovation as a competitive advantage (Esty & Winston, 2009). Given the array of capabilities needed to sustain effective corporate entrepreneurship, competitive advantage provides the manufacturing company with an attractive source of innovations to create positive synergy for the firm. Likewise, if the innovation process or the outcomes of innovation are difficult to copy, then it becomes an increasingly important ingredient in sustaining competitive advantage. Manufacturing products from function, pricing, and distribution offer potential avenues for reducing imitability for innovative advantage (Mali & Malik, 2011).

Parker (2012) recommended that manufacturing firms can only specialize in developing technologies that have pivotal importance to their business in order to protect imitability of key competitive elements. The common thread is identifying outcomes that are difficult for other firms to replicate (Knox, 2012). The performance outcomes are no better if a manufacturing firm chooses to resist change as it innovates and diversifies. The consequences of neglected structural and cultural implications of increased diversification and organizational differentiation particularly where new products often require new structures to foster market exploitation. Therefore, competitive activities must be compatible with a firm's ability to manage potentially radical organizational change (Zengin & Ada, 2010).

According to Gaynor (2012), innovative advantage and subsequent requirements for sustained exploitation, provides incentives for change in the strategic configuration. Innovative advantage
might enable manufacturing firm to broaden its market appeal by introducing cost savings as well as unique features. Successful adaptability requires both knowing when to change and knowing when change is not appropriate (Singh & Singh, 2009). Innovation advantage that help a manufacturing firm make correct choices will have a greater probability of maintaining competitive advantage. As Rof (2012) points out, the foundation of competitive advantage influences a manufacturing firm’s utilization of capabilities such as human skills and relationships, material resources, and relevant knowledge that a firm uses to build products and deliver services having a market place appeal.

Performance of manufacturing industry
Continuous performance is the objective of any organization because only through performance, are organizations able to grow and progress (Gavrea, Ilies & Stegerean, 2011). The concept of performance is uncertain, as scholars often agree that there is no universal definition of the concept. Scholars often agree that performance is a function of time and organizational context. According to Fauzi et al. (2010), performance is the organization’s ability to attain its goals by using resources in an efficient and effective manner. Measuring the performance of an organization as pointed out by Huber (2004) ensures that strategic activities are aligned to the strategic plan further improving the bottom line by reducing process cost and improving productivity and mission effectiveness. Performance measurement as defined by Richard et al. (2009) is the process of quantifying the efficiency and effectiveness of past actions or the process of evaluating how well organizations are managed and the value they deliver for customers and other stakeholders. According to Ango (2008), performance measures include both financial and non-financial; financial measures include profitability, market share, profitability and liquidity. Non-financial measures include efficiency, customer satisfaction and quality of decisions. Performance measurement tools developed to incorporate aspects in measuring performance include; the balance score card, economic value add, triple bottom line approach, cleaner production etc. The balanced score card proposed by (Kaplan & Norton, 2012) is a framework that is used to measure organizational performance. The model identifies and integrates four different ways of looking at performance; financial, customer, internal business processes and innovation and learning perspectives. A balanced scorecard is generally used to clarify and update the business strategy, link the objectives of the organization to the annual budgets, allow organizational change, and increase the understanding of the company vision and mission statements across the organization. A balanced scorecard can be used to translate a firm’s mission and vision statements into a broad set of objectives and performance measures that can be quantified and appraised, and measures whether management is achieving desired results (Laforet& Li, 2015).

The triple bottom line is another framework used to measure the performance of an organization. It integrates three pillars that are used to measure performance namely people, profit and natural capital. People relate to the fair and beneficial business practices toward labor and the community in which the organization operates, this is mostly achieved by organizations through corporate social responsibility (Budugan&Georgescu, 2009). Profit is the economic Value created by the organization after deducting the cost of all profits including the tied up capital, it is the real economic impact the organization has on its economic environment Natural resources refers to sustainable environmental practices, an organization seeks to benefit the natural order as much as possible or at the least do no harm and minimize environmental impact (Bouquin, 2014). The triple bottom line approach therefore interprets the accounting profit of an organization plus social and
environmental impacts. Profit is considered as an important factor in manufacturing firm’s financial statement and it has been widely used to determine the manufacturing firm financial performance (Dobi, 2007).

Different measurements have been used in order to measure performance depending on the accounting policies adopted by the different manufacturing firms (Amidu, 2007). Kapoor et al. (2010) used Earnings before Interest and Tax (EBIT) /Total assets to measure profit, which is interpreted as organizational performance. Another method used to measure performance that is adopted by manufacturing firms is the return on equity (ROE). An Al-Shubiri (2011) state that ROE is one of the best measurements of a company’s profit since it reveals the capacity of a firm to generate cash internally. Benartzi et al. (2007) on the other hand pointed out that manufacturing firms current year’s earning affects the dividend payment pattern of the firms. Shareholders use dividends payments to establish the performance of manufacturing firms in Kenya. Lewis (2014) summarized key performance indicators in the manufacturing sector into the following sub-categories; quantitative indicators which can be presented with a number of outlets, branches, qualitative indicators which can’t be presented as a number and can be used to measure intangible performance of an organization, leading indicators which can be used to predict the future outcome of a process and financial indicators used in performance measurement and when looking at an operating index. Thompson et al. (2007) notes that, the success with which a firm’s business strategy effectively addresses its industry’s key success factors will determine its strategic performance; therefore, performance is an outcome of strategy especially competitive strategies. Strategic performance is measured in terms of both financial and market success. Financial performance is essential for continued business operations as well as financial capabilities which are critical in supporting functional strategies and making required infrastructure investments. Kotler et al. (2009), says that market share demonstrates a firm’s ability to create and hold customers, which determines the long term success of a firm.

**Empirical Review**

Various studies have been done such as Collier and Gunning (2009) in their two survey papers posed the question as to why success of manufacturing firms has been such a rarity in Africa. In their first paper they ask if macro and micro evidence give broadly similar answers to the question as to why Africa performed badly. In their second paper they consider whether it is policy or destiny, either internal or external, which the principle determinant of widespread failure in Africa is. Their answer in their first paper is that both macro and micro evidence point in the same direction - Africa suffers from low social capital, poor infrastructure and risk. Their second paper argues that it is policy not destiny that is the key to poor performance. Their analysis points to poor policy resulting in a nexus of constraints from which escape is difficult but not impossible. Trade liberalization and macroeconomic stability are policies which have frequently been adopted at the same time as large nominal devaluations. In these areas of macroeconomic policy there have been divergent outcomes. Ghana is a good example of a country which has made substantial progress on trade liberalization but has had very much less success with macro stability. South Africa is a country which since 1994 has moved rapidly in both areas. In terms of export growth generally Ghana has been more successful than South Africa. In terms of manufacturing export growth South Africa has been the more successful economy of the two.

Unlike the case in developing countries, there is growing research analyzing the determinants of firm-level profit variation in industrialized countries where one of the major issues has been
the nature of product market competition and the role of concentration, economies of scale and the presence of outside competitive forces in the form of entry-exit barriers on firm profitability (Porter, 1980; Slater and Olson, 2002). As reviewed by Goddard et al. (2005), a second issue that took considerable attention is the examination of the time-series behavior of firm profitability using the so-called of persistence of profitability method. Accordingly, the central question is to what extent any divergence of a firm’s profitability rate from the market average is corrected through the presence of competitive forces.

In the case of developed countries, empirical evidence on the strength and duration of persistence of above the average profitability is presented by various papers including Godard et al. (2005) for four EU countries, Goddard et al. (2006) for the UK, and by and Gschwandtner (2005) for the USA. The overall findings of this literature suggest that there are differences between firms’ long-run equilibrium profit rates and changing degrees of yearly persistence, possibly reflecting the influence of both industry-level and firm-level factors. The only research in this field that focused exclusively on developing country experiences are Glen et al. (2013) for a subset of emerging markets, Kambahampati and Mueller (2010) (ed) includes a collection of articles on persistence of profit analysis for USA, UK, Canada, Germany, France and Japan. Parikh (2003) for India, and Yurtoglu (2004) for Turkey. In particular, Glen et al. (2013) analyze the impact of competition in the product markets on firm profitability using the persistence of profitability methodology in the case of Brazil, India, Jordan, Korea, Malaysia, Mexico and Zimbabwe. Similarly, Kambhampati and Parikh (2003) and Yurtoglu (2004) conduct a similar analysis in the case of India and Turkey using panels of manufacturing firm data. Accordingly, the existing empirical evidence shows a declining trend in macroeconomic volatility in developed countries. McConnell and Perez-Quiros (2000), for instance, found a declining GDP volatility in the US since mid-1980s. Similar results are reported for developing countries although with higher variance. Montiel and Serven (2004), for example, reported a decline in the standard deviation of per capita GDP growth from 4 percent in the 1970s and 1980s to about 3 percent in the 1990s, which even then remained well above the 1.5 percent in developed countries. Also, they reported that the reduction in volatility was not uniform and one third of 77 countries analyzed did actually see an increase in growth volatility in the 1990s relative to the 1980s. Among others, in Turkey the standard deviation of real GDP growth has steadily increased from 3.5 to 5.2 and 6.1 between 1980-89, 1990-1999, and 2000-2005 respectively. Also, Kose, Prasad, and Terrones (2003) found an increase in consumption volatility in emerging markets during the 1990s.

In contrast, there has been a general increase in the uncertainty and volatility of key macro prices as well as capital flows in developing countries in the post financial liberalization era that had a direct impact on firm profitability. The determinants of firm-level profit variation, based on the nature of product market competition, economies of scale, and outside competitive forces in the form of entry-exit barriers, have long been an active topic of research (Slater and Olson, 2002). In this field, a major issue for both developed and developing countries has been the examination of time-series behavior of firm profitability using the persistence of profitability method, which suggest that there are differences between firms’ long-run equilibrium profit rates and changing degrees of strength and duration of yearly above the average profits reflecting the influence of both industry and firm level factors (Parikh, 2003; Yurtoglu, 2004; Goddard, Tavakoli & Wilson, 2005).
More recently, firm level heterogeneity in explaining profit variation through trade openness has also been at the center of a growing research along the lines of new trade theory (Melitz, 2003; Baldwin, 2005) Likewise, there is considerable work on the effects of macroeconomic uncertainty and volatility on firm profitability in developed countries. Jorion (1990), Amihud (1993), Bartov and Bodnar (1994), and Bartov, Bodnar and Kaul (1996) focusing on the US multinational firms, for example, find a negative effect of uncertainty and volatility on firm profitability. On the theoretical front, Shapiro (1974) and Dumas (1978) show a negative effect of exchange rate uncertainty and volatility on firm profitability, while Baum, Caglayan and Barkoulas (2001) point out an indeterminate effect of volatility on profit growth rates.

Regarding volatility in global markets, there have been significant changes with major ramifications for firm profitability in developing countries. In particular, for a variety of reasons that are open to debate (including the role of goods and capital market openness, institutions, financial development, etc.), macroeconomic volatility has been much higher in developing countries than developed ones. In the case of growth volatility, while it declined in developed countries during the 1990s (McConnell & Perez-Quiros, 2000), Montiel and Serven (2004) report an increase in one third of 77 developing countries, with an overall volatility twice higher than the developed ones. Likewise, terms of trade volatility is found to be more than three times higher in developing countries (except in East Asia) during every decade since 1960 (Loayza et al., 2007). Furthermore, there is evidence that volatility has been on the rise during the 1980s and 1990s. Kose, Prasad and Terrones (2003) show an increase in consumption volatility in emerging markets during the 1990s. The volatility of capital flows to developing countries is also found to be, high, rising and unpredictable" during the 1990s compared to 70s and 80s (Gabriele, Boratav& Parikh, 2000).

RESEARCH METHODOLOGY
The research design used in this study was descriptive research. Descriptive design is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. The 307 pharmaceutical firms formed the target population of the study while 5 pharmaceutical manufacturers were used as a pilot study. 1147 employees were selected from those registered pharmaceutical manufacturers to form a target population. The study was undertaken at registered pharmaceutical manufacturers in Kenya. The sampling frame was drawn from various employees in those registered pharmaceutical manufacturers. The researcher used questionnaires and secondary data as the research instrument to gather the relevant information needed related to the study. Closed-ended questionnaires were used to generate statistics in quantitative research. Open-ended questionnaires were used in qualitative research. Primary data was collected through the administration of questionnaires to senior management manufacturing firm’s employees. The information gathered from the respondents was of a qualitative and quantitative nature. Data was analyzed using Statistical Package for Social Sciences (SPSS Version 24.0) which is the most recent version.

DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS
Out of 252 questionnaires administered, a total of 168 filled questionnaires were returned giving a response rate of 66.67% which is within what Parker (2012) prescribed as a significant response rate for statistical analysis and established at a minimal value of 50%. Reliability analysis was subsequently done using Cronbach’s Alpha which measures the internal consistency by establishing if certain items within a scale measure the same construct. The respondents were requested to indicate the number of years they had worked in
the firm. From the 41.1% of the respondents indicated that they had worked in the firm for 6-10 years. Again 36.9% of the respondents indicated that they have been working in firm for 11 years and above while 22% of the respondents indicated that they have been working in the firm for 5 years and below. This implied that majority of the respondents had worked in the firm long enough to comprehend the subject under study. The respondents were again asked to indicate their level of education. 42.9% of the respondents showed that they had a degree, 34.5% of the respondents indicated that they had a college diploma, 14.3% of the respondents showed that they had a certificate while 8.3% of the respondents indicated that they had masters. This implied that majority of the respondents were learnt enough to understand the subject under study.

**Resource Constraint**

The respondents were asked to indicate the major resources which are used in their firm. Their responses were as presented in the table 1.

<table>
<thead>
<tr>
<th>Major Resources Used in the Firm</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour</td>
<td>96</td>
<td>57.1</td>
</tr>
<tr>
<td>Capital</td>
<td>72</td>
<td>42.9</td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>100</td>
</tr>
</tbody>
</table>

From the above results, 57.1% of the respondents indicated that labour was the most used resource while 42.9% of the respondents indicated that capital was used in the firm. This concurred with Bouquin, (2014) who suggested that the manufacturing organization’s employees can determine the ultimate success of their organizations given the importance of people in the manufacturing organizations; most strategic human resource departments consider the management of the competencies and capabilities of these human assets the primary goal.

The respondents were requested using a likert scale of 1-5 to tell the extent to which the resource constraints influence performance of Pharmaceutical manufacturing industry in Kenya. Their responses were as shown in table 2.

<table>
<thead>
<tr>
<th>Extent to which Resource Constraints Influence Performance</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No extent at all</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Little extent</td>
<td>12</td>
<td>7.1</td>
</tr>
<tr>
<td>Moderate extent</td>
<td>69</td>
<td>41.1</td>
</tr>
<tr>
<td>Great extent</td>
<td>72</td>
<td>42.9</td>
</tr>
<tr>
<td>Very great extent</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>100</td>
</tr>
</tbody>
</table>

As per the above results the respondents indicated that resource constraints influences performance of Pharmaceutical manufacturing industry in Kenya in great extent as shown by 42.9%, in a moderate extent as shown by 41.1% and in a little extent as shown by 7.1%. Further the respondents indicated that resource constraints influenced performance of Pharmaceutical manufacturing industry in Kenya in very great extent as illustrated by 6% while 3% indicates that resource constraints influences performance of Pharmaceutical manufacturing industry in Kenya at no extent at all. This was in line with Hasanali (2012) who argue that employees are arguably the most valuable resource manufacturing company possesses and it is widely accepted that employee exposure and experience are positively linked to firms’ performance aimed at improving its competitive advantage. The respondents were also requested using a likert scale of 1-5 to tell the level of agreement with various statements related to
resource constraints influenced on performance of Pharmaceutical manufacturing industry in Kenya. Their responses were as shown in table 3.

Table 3: Agreement with Various Statements Related to Effects of Resource Constraints

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
<th>Std dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong personnel enhances quality of services of the manufacturing firm</td>
<td>4.048</td>
<td>0.733</td>
</tr>
<tr>
<td>Adequate Financial resources can help the manufacturing firm to acquire large market share</td>
<td>4.071</td>
<td>0.747</td>
</tr>
<tr>
<td>Machinery resources promotes efficient production in manufacturing firm</td>
<td>3.435</td>
<td>0.554</td>
</tr>
<tr>
<td>Technological resources enhances efficiency of manufacturing firms</td>
<td>2.982</td>
<td>0.770</td>
</tr>
</tbody>
</table>

The above findings showed that the respondents agreed on the fact that strong personnel enhanced quality of services of the manufacturing firm as illustrated by a mean of 4.048. This concur with Burack et al. (2014) who suggested several ways that manufacturing organizations could maintain high commitment and high performance among employees and ultimately organizational effectiveness thus attain competitive advantage.

Further the respondents agreed on the fact that adequate financial resources could help the manufacturing firm to acquire large market share as shown by a mean of 4.071. However the respondents were neutral that Machinery resources promotes efficient production in manufacturing firm as depicted by a mean of 3.435 and that technological resources enhanced efficiency of manufacturing firms as illustrated by a mean score of 2.982. These findings were in line with Bouquin, (2014) who suggested that the manufacturing organization’s employees can determine the ultimate success of their organizations given the importance of people in the manufacturing organizations; most strategic human resource departments consider the management of the competencies and capabilities of these human assets the primary goal.

Information Communication Technology
Further the study sought to examine the influence of ICT on the performance of Pharmaceutical manufacturing industry in Kenya. The study used the responses of the respondents to come up with the findings.

The respondents were asked using a likert scale of 1-5, to tell the extent to which ICT influences performance of Pharmaceutical manufacturing industry in Kenya. Their responses were as shown in table 4.

Table 4: Extent to which ICT Affect Manufacturing Firms in Kenya

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No extent at all</td>
<td>13</td>
</tr>
<tr>
<td>Little extent</td>
<td>14</td>
</tr>
<tr>
<td>Moderate extent</td>
<td>57</td>
</tr>
<tr>
<td>Great extent</td>
<td>76</td>
</tr>
<tr>
<td>Very great extent</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
</tr>
</tbody>
</table>

The findings above indicates that ICT influences performance of Pharmaceutical manufacturing industry in Kenya in a great extent as shown by 45.20%, that ICT influenced performance of
Pharmaceutical manufacturing industry in Kenya in a moderate extent as illustrated by 33.9%, that ICT influenced performance of Pharmaceutical manufacturing industry in Kenya in a little extent as shown by 8.3%that that ICT influenced performance of Pharmaceutical manufacturing industry in Kenya in a very great extent as illustrated by 4.8% while 7.7% indicated that ICT influenced performance of Pharmaceutical manufacturing industry in Kenya in no extent at all. This concurred with Parker (2012) who recommended that manufacturing firms can only specialize in developing technologies that have pivotal importance to their business in order to protect imitability of key competitive elements.

Using a likert scale of 1-5, the respondents were asked to tell the extent to which strategic alliance influences performance of Pharmaceutical manufacturing industry in Kenya. Their responses were as shown in table 5.

**Table 5: Agreement with various statements related to effects of ICT**

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
<th>Std dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The manufacturing firm that engage in online Services will boost its competitive edge</td>
<td>4.077</td>
<td>0.599</td>
</tr>
<tr>
<td>Adequate infrastructure innovation of a manufacturing firm increases its market share</td>
<td>3.941</td>
<td>0.635</td>
</tr>
<tr>
<td>Process automation of a manufacturing firm enhances it efficient and effective production</td>
<td>2.000</td>
<td>0.812</td>
</tr>
<tr>
<td>Internet and internet of a manufacturing firm enhances it efficient and effective information sharing</td>
<td>3.357</td>
<td>0.572</td>
</tr>
</tbody>
</table>

As per the results above, the respondents agreed that the manufacturing firm that engage in online Services will boost its competitive edge as illustrated by a mean score of 4.077. This is in line with Rof, (2012) who claims that companies that do not embrace technological advancement have faced stiff competition and sometimes even remain irrelevant for instance Telekom Kenya was the leading communication industry in Kenya technological advancement and the fact that Safaricom remains at the top of technology has seen Safaricom remain the market leader in communication in Kenya.

Again the respondents agreed on the fact that adequate infrastructure innovation of a manufacturing firm increased its market share as depicted by a mean score of 3.941. This concurred with Parker (2012) who recommended that manufacturing firms could only specialize in developing technologies that had pivotal importance to their business in order to protect imitability of key competitive elements.

However the respondents were neutral that internet of a manufacturing firm enhanced it efficient and effective information sharing as shown by a mean 3.357 and disagreed on the fact that process automation of a manufacturing firm enhanced it efficient and effective production as illustrated by an average of 2.000. These findings were in line with Gaynor (2012) who argued that innovative advantage and subsequent requirements for sustained exploitation, provides incentives for change in the strategic configuration.

**Firm Performance**

Under this the study sought to determine the trend of the profits, sales volume as well as market share for the firms. The findings were presented below.

The respondents were requested to indicate the trend of various performance indicators. Their responses were as shown below.
The figure 2 showed that profits per year dropped between 2011 and 2012. Between 2012 and 2013 the contributions per year increased although there was a drop in the contributions per year between 2014 and 2015.

From the above results the respondents indicated that sales volumes have increased between the years 2011 and 2013 but dropped as from 2013 to 2015.

Further the respondents indicated that market share has been increasing from 2011 to 2013 but there was a decrease between 2014 and 2015.

**SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

The study found that resource constraints affected performance of Pharmaceutical manufacturing industry in Kenya greatly. The study agreed on the facts that strong personnel enhanced quality of services of the manufacturing firm. Further the study agreed on the fact that adequate financial resources could help the manufacturing firm to acquire large market. However the study was neutral that Machinery resources promotes efficient production in manufacturing firm and that technological resources enhances efficiency of manufacturing firms.
In regard to information communication technology the study found that it greatly affected performance of Pharmaceutical manufacturing industry in Kenya. The study agreed on the fact that the manufacturing firm that engaged in online Services would boost its competitive edge. Again the study agreed on the fact that adequate infrastructure innovation of a manufacturing firm increased its market share. However the study was neutral that internet of a manufacturing firm enhanced it efficient and effective information sharing and disagreed on the fact that process automation of a manufacturing firm enhances it efficient and effective production.

**Recommendations**

Concerning resource constraints, the study found that strong personnel enhance quality of services of the manufacturing firms. The study therefore recommends that the firms should be encouraged to recruit the qualified workers both academically and professionally since experienced will enhance the performance of the firm. This will ensure that the products produced are of high quality hence maintaining their customer as well as ensuring customer satisfaction.

In regard to information communication technology, the study again found that the manufacturing firm that engage in online Services boost its competitive edge. Therefore the study recommends that Pharmaceutical manufacturing industry in Kenya should integrate information communication technology. This will assist in advertisement where the firm is able to make the public aware of the existence of their products and also enhance online promotions for their goods hence improving the performance of the firm.

**Recommendation for Further Studies**

The study further recommends that the same study should be done in other counties in Kenya where there are Pharmaceutical manufacturing industries and investigate the factors affecting performance of Pharmaceutical manufacturing industry in those respective counties. The researcher should go ahead and establish how the factors tackled in this study as well as other factors not mentioned affects performance of Pharmaceutical manufacturing industry.

The study also recommends further studies to be done to investigate factors in relation to customer satisfaction and establish their effect on the performance of Pharmaceutical manufacturing industry in Kenya.

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