

**THE INFLUENCE OF CREATIVITY ON PERFORMANCE OF SMALL AND  
MEDIUM MANUFACTURING ENTERPRISES IN KENYA**

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**ABSTRACT**

In the global economy of the 21<sup>st</sup> century, competition is complex, challenging and fraught with competitive opportunities and threats. Product innovation is increasingly becoming the main focus for entrepreneurs especially those in the manufacturing sector. Without effective organizational structure, the capability of a firm to achieve or sustain a competitive advantage is greatly constrained. Most SMMEs in Kenya post poor performance and majority of them do not celebrate their third birthday. Research on product innovation and its dimensions may lead to improved performance especially for the manufacturing sector that is supposed to account for 20% of the GDP by the year 2030, as visualized in the Kenya vision2030. This study examines the influence of creativity (being one of the dimensions of product innovation) on the performance of Small and Medium Manufacturing Enterprises (SMMEs) in Kenya. The objective of the study was to determine how creativity influences firm performance. Entrepreneurial orientation moderated the relationship between product innovation and firm performance. A representative sample of 254 managers or entrepreneur owner managers was selected from manufacturing firms registered under Kenya Association of Manufacturers using stratified random sampling. A self-administered, semi-structured questionnaire was used to collect the data. The questionnaire was pre-tested to ensure its validity and reliability. Data was analyzed using an appropriate model developed as a function of both the dependent and the independent variables, to measure their relationship. Data was analyzed and descriptive statistics presented, from which inferences were made as well as the conclusion and recommendation. This study would benefit the industry, SMMEs owner managers, researchers and the government. The study found that creativity was a significant predictor of firm performance.

Key Words: Creativity, Firm performance

## 1. INTRODUCTION

### 1.1 Background to the Study

This study focuses on the influence of product innovation on performance of small and medium manufacturing enterprises (SMMEs) in Kenya. The manufacturing sector plays a critical role in not only improving the overall performance of the global economy, but it also drives innovation for long-term sustainable economic growth (Kennedy, 2013). A study by UNIDO (2015) revealed that the world manufacturing sector has continued to struggle in its growth as a result of the global crisis of the year 2009. The pace of growth of the manufacturing sector has over the past few years decelerated. Small and medium enterprises (SMEs) in the sector need to constantly innovate in order to ensure improved performance and success of their enterprises. Tucker (2011) posits that innovation is the best way of stimulating improved performance in a firm. The most innovative firms realize higher turnover of products and services introduced within a period of time. A study by Freeman (2011) asserts that to choose to be non-innovative is to choose death of an organization. It is for these reasons that measures should be taken to reduce the challenges defacing the sector.

The influence of product innovation on firm performance has been one of the issues of most importance in recent literature. Product innovation refers to the introduction to the market of a new product or service that is new or significantly improved with respect to its characteristics or intended uses (Moses, Sithole, Labadarios, Blankley & Nkobole, 2012). Product innovation represents the provision of solutions to market threats and opportunities thus creating the basis for the survival and success of the firm into the future (Rick, Andy and Jacob, 2015). Several scholars (Li, Su, and Liu, 2010; Dobbin, Lassen and Nelson, 2015) argue that product innovation enables a company to gain competitive advantage, establish a leadership position in

the market and gain new customers to advance market position. A study by Kaya and Agca (2014) posit that creativity is the seed of all innovations. Amabile (2012) argues that creativity truly enhances product innovation when senior management provides sufficient resources that include an array of elements: technological expertise, adequate time for developing novel work, training, teams, motivation, sufficient funds and material resources. It is widely accepted that creative activities and the resulting innovations emanating from them are key to driving US competitiveness and prosperity (Porter & Rivkin, 2012)

The National Trends and International Comparisons (NTIC) (2012) survey revealed that the worldwide innovations and Research and Development (R&D) expenditures totaled an estimated \$1, 276 billion in 2009. The United States was by far the largest innovative and R&D performer (\$402 billion) in 2009, accounting for about 31% of the global total expenditures. However this was a decline from 38% in 1999 to 31% in 2009. Inadequate investment in product innovation has resulted to negative growth of SME's in the manufacturing sector in many economies of the world. In the United States (U.S) only 4,098 new agreements to license innovations were registered and revenue generated from innovations amounted to only \$24,452 million. This was far less below the projected revenue in 2011 (NSF/NCSES, 2011)

Although China is emerging as a powerful economy, there is still a significant wide variation across provinces regarding new product output, new product intensity and the share of new product firms. The inland provinces such as Mongolia, Guizhou, Qinghai and Ningxia have limited new product output. The inner provinces are the least innovative with growth rate ranging from Mongolia (0.5%), Tibet (0.8%) and Xinjiang (1.3%). The inner provinces have also the lowest percentage of new product firms at 1.1% to 2.9%. These findings suggest that there are large disparities in product innovation across regions in China (Zhang 2014; 2010; Lin, Li and Yang, 2011; Martin, Mayer and Mayneris, 2011).A study on innovation indicators

and performance for Danish firms revealed an insignificant Heckman's value. The Mills ratio was also negative suggesting that there are unobserved characteristics that increase the probability of being innovative (Cater & Schwab, 2008).

The South Africa innovation survey (2012), covering the period 2005-2007 revealed that 34.6% of enterprises reported no innovation activities at all. The non-innovative enterprises accounted for 7,915 firms and only employed about 0.27 million employees. This indicates that innovation tends to create employment (Moses, Sithole, Labadarios, Blankley & Nkobile, 2012). M-Pesa has had notable success where Vodacom Tanzania has 3.6 million M-Pesa customers out of its 11.6 million mobile subscribers as at June 2012, representing a mobile money penetration rate of 31%, however, this was far much below the projected market share in 2012 (Jack, William, Suri and Tavneet, 2012; CCK, 2012; Mutiga 2014; Saylor and Michael, 2012). In Uganda, "e.water" is a new innovation that enables water consumers to pay their bills through their phones, within four months of the "e.water" launch, in March 2011, over 20,000 of the National Water and Sewage Corporation (NWSC) account holders had switched to the mobile money option, accounting for 10% of the total customer base. (Equity bank, 2013; Hope, Foster, Krolikowski and Cohen, 2011).

Safaricom was ranked the ninth most innovative company in the world in 2013. A report entitled "Global Online Payment Methods, 2014" disclosed that, there are 25 million M-Pesa account holders, where more money than Kenya's national budget of KES 2 trillion is transacted annually. The report adds that online and mobile payments worldwide are forecast to KES 300 trillion in the next five years (CBK, 2014; Kariuki, 2015; Mutiga, 2014; Saylor and Michael, 2012; Mugo, 2014). The M-Pesa users increased from 41% in 2009 to 67% currently. The mobile money contributes 6.59% of the total national payments. Over two thirds of the Kenyan adult population is subscribed to mobile money transfer services and 78% of

this number use M-Pesa, where Individuals can send money to others via their phone through a network of over 60,000 local agents (CBK 2014; Kariuki, 2015). Bank agents conducted over 92 million deals worth KES 500 billion by March 2014 compared to 39 million transactions worth KES 250 billion done from 2010 to march 2013. As at march 2014, there were 14 banks which had appointed 24,645 agents, who have executed over 92.61 million transactions valued at over KES 498.97 billion since 2010 (CBK, 2014; Equity bank, 2013; ANAS, 2013; Nganga and Mwachofi, 2013). A recent study by the Financial Sector Deepening (FSD) Kenya (2014) shows that agents had significantly increased access to banking services with 52% of the country's population being within three kilometers of an agent compared with only 22% within three kilometres of a branch.

M-Kopa is ranked the world's top ten most innovative companies of 2015 in Africa. M-Kopa solar has introduced a Safaricom-branded solar lighting system which provides clean lighting solutions to millions of homes at a cost of KES 40 daily. M-Kopa is connecting 2000 homes every week and has already connected 90,000 Kenyan homes (CBK, 2015; Mureithi, 2014). More than 500,000 resource poor farmers have benefited from tissue culture banana technology transfer that has earned the Kenyan farmer an average of KES 5.5 billion. It is expected to hit KES 20 billion by 2015. The area under banana production has increased from 43,000 hectares in 1996 to 96,000 hectares to date and has uplifted Kenyans living beyond the poverty line to earn \$3 per day (CBK, 2014; Eijkman, 2013). Daktari 1525 is a 24/7 innovation product that was launched in 2011. Daktari 1525 is a 24/7 call-in service that for a small fee, connects callers one-on-one with a doctor. It has a pool of 50 doctors, and this year it is anticipating to get more customers calling and more Kenyans healthy (ANAS, 2014)

## 1.2 Statement of the problem

Small and medium enterprises in Kenya are faced with many challenges. A study by Tarus and Ng'ang'a (2013) reveals that small and medium manufacturing enterprises in Kenya have been facing critical challenges of low performance, declining trend in innovative activities and a high level of attrition. This is despite the fact that they are an important factor in the attainment of the Kenya vision 2030, which stipulates that the manufacturing sector should account for 20% of the GDP (RoK, 2007). Although Small and Medium Manufacturing Enterprises (SMMEs) account for 70% of Kenya's manufacturing sector (KIPPRA, 2014), their growth dropped from 5.6% in 2013 to 3.4% in 2014 (RoK, 2015).

Despite SMME's significant contribution to GDP in Kenya they are still not performing as expected. This is the reason why in 2014, a number of SMMEs in Kenya: meat and meat products processing firms, leather shoes, industrial gas, t-shirts and knitted fabrics, fish processing and preserving firms and shoe polish among others all posted negative growth (RoK, 2015). If such failures are not checked, they may lead to lowering of GDP due to low productivity and consequently lower profit margins for many firms in Kenya. When the state of macro economy is less favourable the opportunities for profitable employment expansion will also be limited. Increasing negative GDP stirs worry of economic recession among economist and investors (Ndungu, 2014).

The challenges facing SMMEs may be partly be addressed by product innovation as it is suggested as one of the key drivers of economic performance and growth of small firms (Rosenbunch, Brinckman and Bauch, 2011; Chiara Daniela and Analisa, 2015). A study by Wanjiku (2011) on industrial innovation in the face of stiff competition from Chinese imports

did not specifically focus on product innovation. Ndalira (2013) studied Effects of the type of innovation on the growth of SMMEs in Kenya but did not specifically study product innovation in the manufacturing sector. Khiu, Ahmad and Ramayah (2010) studied product innovation among Information and Communication Technology techno-preneurs in Malaysia but used a small sample of five software firms and hence the results cannot be generalized. Atalay (2013) studied the relationship between innovation and firm performance in Turkey but did not specify the size of the firms and hence the results cannot be generalized. This shows that limited attention has been paid on the product innovation- SMMEs performance model. This study seeks to address these gaps by undertaking an empirical study on the influence of product innovation on the performance of SMMEs in Kenya.

### **1.3 Research Objectives**

- i. To establish the influence of technological expertise on performance of SMMEs in Kenya.
- ii. To establish the influence of team work on performance of SMMEs in Kenya.
- iii. To establish the influence of motivation on performance of SMMEs in Kenya.

## **2. LITERATURE REVIEW**

### **2.1 Theoretical Review**

#### **2.1.1 Componential Theory of Creativity**

Componential theory of creativity proposes that organizational creativity appears at the interplay between organizational components that are deemed necessary for overall innovation such as organizational resources, management practices and organizational motivation. This theory is proposed by Amabile (Amabile, 2008).The componential theory of creativity is grounded in a definition of creativity as the production of new ideas or outcomes that are both

novel and appropriate to some goal. The theory proposes three components that are necessary for any creative response: domain-relevant skills, task motivation and teamwork (Amabile, 2008). Domain-relevant skills include Knowledge, technological expertise, and intelligence in the specific domain where the entrepreneur is focusing such as product design. These skills comprise the raw materials upon which the individual can draw throughout the creative process (Amabile, 2012).

Motivation can be intrinsic or extrinsic in nature. Intrinsic motivation arises from the individual's positive reaction to the qualities of the task itself such as interest, involvement curiosity and satisfaction while extrinsic motivation arises from sources outside the task itself such as a promised reward, meeting a deadline or winning a competition (Amabile, 2012). The social environment dynamics emphasizes creation of teams. Teamwork is an important element in organizational settings as it facilitates effectiveness and efficiency in an organization (Dul, Celyon & Jaspers, 2011).

The theory is important in this study as most practitioners, and managers have relied on tools and techniques developed from the theory to stimulate creativity and innovation within their organizations (Amabile, 2012). The theory specifies that creativity requires a confluence of all components. Creativity should be highest when an intrinsically motivated person with high domain expertise and high skill in creative thinking works in an environment high in support for creativity (Amabile, 2008). This theory is important to this study as recent evidence shows that some product or process innovation is taking place at every instant in time (Ljiljana & Dosen, 2015). This theory is also useful in this study since research shows that firms seeking to be competitive and responsive to environmental changes need to introduce innovations (Ndungu, 2014).



## 2.2 Empirical Review

Ljiljana and Durdana (2015) investigated enabling product innovation and creativity in market-oriented firms. They based their study on seven case studies. Findings revealed that creativity and product innovativeness might suffer due to a dominance of customer requirements and competitors' ideas and creative solutions. Firms get involved in generating and gathering information in order to use it for various purposes including product innovation development. When product innovation relies very little on what the firm finds out about customers and competitors, the firm still exercises market orientation principles; market orientation principles were acknowledged for their contribution to product innovation; the contribution to market success and commercialization of product innovation was largely recognized. This study may help business practitioners interested in fostering innovation in their firms by implementing market orientation as the findings suggest that they have to carefully consider how to design those activities since there is more than one way that leads to success.

Ozge and Mette (2011) undertook a study on: Does organizing creativity really lead to innovation? The study was done in a particular region in Denmark to analyse whether organizational creativity does lead to innovation in small firms. A sample of 147 firms was used. They found out that organizing creativity does lead to innovation but only product innovation. Also encouraging employees for innovative behaviour in a stimulating work environment, allocating resources and providing idea time played a crucial role in stimulating creativity and supporting product innovation. Another finding was that high levels of freedom are found to be acting against product innovation. There was no relationship between organizational creativity and process innovation.

### 2.3 Research Gaps

The manufacturing sector's contribution to GDP stands at 10% (ROK, 2015). Formal employment rose by 2.9% to 287,456 persons, while the total wage earnings increase by 12.4% from KES 98.3 million in 2013 to KES 110.5 million in 2014. The Kenya vision 2030 stipulates that the manufacturing sector should account for 20% of GDP (RoK, 2007). However in 2014 a number of SMMEs posted negative growth; leather shoes declined by 0.4%, industrial gas by 4.2%, T-shirts and knitted fabrics by 12.1% among others. The contribution of the manufacturing sector to GDP also stagnates at 10% despite its high potential.

A number of studies have been done on area of product innovation mostly in the United States of America, Europe and Asia .Diaya, Kohei and Hiroshi (2012) studied new-to-market product innovation and firm performance but did not indicate the sizes of the firms in the sample. In the study by Hans (2014), the effects of product innovation was not specifically covered. Palmer (2011) studied product innovation in small firms, Mariann, Isabelle and Rutger (2012) investigated product innovation processes in small firms but the study did not cover the manufacturing sector; Miguel and Elena (2009) investigated product innovation in small manufacturers but did not highlights the influence of product innovation.

Out of the many studies that have been done, only a few studies have been carried out in Kenya including Gichana, Ongwae and Romanus (2013) in their study on innovation activity and firm growth across key sectors of the Kenyan economy but did not indicate the firm sizes and the sectors involved; Mbogo and Ashika (2013) who studied the factors influencing product innovation in micro finance institutions, focused on the service sector but did not study the manufacturing SMEs. Mwangi and Namusonge (2014) who investigated the influence of

innovation on small and medium enterprise (SME) growth did not study the influence of product innovation on manufacturing SMEs. These studies show that limited attention has been paid to the influence of product innovation-firm performance relationship model in Kenya. This study therefore filled on this existing knowledge gap.

### **3. METHODOLOGY**

#### **3.1 Research Design**

A research design is a framework for data collection and analysis to answer a study's research questions (Bryman & Bell, 2011). Orodho (2008) asserts that decisions regarding what, where, how much, by what means concerning an inquiry or research study constitutes a research design. Cooper and Schindler (2011) and Kothari (2010) suggest that a research design constitutes the blue print for collection, measurement and analysis of the data. A research design enables the researcher in allocation of limited resources by posing crucial choices in methodology (Cooper & Schindler, 2011). This study adopted mixed methods research guided by cross-sectional survey design. A cross-sectional survey design enables the researcher to capture information based on data gathered for a specific point in time (Cooper & Schindler, 2011). Onwueghbuzie and Turner (2007) and Creswell and Clark (2011) refer to the integration of qualitative and quantitative research methods as mixed-methods research.

#### **3.2 Population of the study**

Population refers to the entire collection of all subjects from where a sample is drawn (Zikmund, Babin, Carr & Griffin, 2012). The target population is a group of individual objects or items from which a sample is taken for a specific study (Kombo & Tromp, 2009). The target population for this study was SMME's registered with the Kenya Association of Manufacturers

(KAM). There were seven hundred and fifty-two (752) manufacturing firms registered with KAM as at June 2017.

### 3.3 Sampling Design

Stratified random sampling with a proportional allocation of each stratum was used to obtain a representative sample in this study. In random sampling, each item in the population has a probability of selection same as any other item in the population. Stratified random sampling is used for data which is heterogeneous. The population is divided into sub-groups with common characteristics and the representatives from each sub-group are to be part of the sample (Kothari, 2010). Mugenda and Mugenda (2003) posit that at least 30% of the population is adequate to form the sample size. Hill (2012) suggests that at least 10% sample size of the population is adequate for a research study, while for a small population, 20% should constitute a sample. The sample for this study was determined using the sample table developed by Krejcie and Morgan in 1970 as shown in appendix two (Research Advisors, 2006). The population for this study is between 700 and 800 and therefore the sample size at 95% confidence level was  $(248+260)/2=254$  representing 34% of the population which is based on the following formula by Krejcie and Morgan.

$$s = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)} \dots \dots \dots \text{Equation (1)}$$

$$\frac{3.841 \times 752 \times 0.5 \times 0.5}{\dots \dots \dots} \dots \dots \dots 6.05$$

$$\dots \dots \dots \times 0.05 \times 751 + 3.841 \times 0.5 \times 0.5$$

$$= 254$$

### 3.4 Data Collection and Instrumentation

Kombo and Tromp (2009) define data collection as the gathering of information to serve or prove some facts. The researcher collects both primary and secondary data. The primary data was obtained by administering a self-administered, semi-structured questionnaire. Questionnaires consist of a series of specific, short questions that are asked verbally by the interviewer or answered by the respondents on their own (Cooper & Schindler, 2011). The secondary data was collected from published sources such as the internet, library and research done by other scholars. After data collection, the researcher used various methods of estimating non-response. There are three methods that are commonly used: comparison with known values for the population, subjective estimates and extrapolation

### **3.5 Data Analysis**

This study used both descriptive and inferential statistics to analyze the data. Descriptive statistics describe and summarize the data in a meaningful way using charts, tables and bars while inferential statistics draw conclusions on the analyzed data thus helping in generalization. Therefore pie-charts, bars and histograms formed part of the analysis for presentation of results. Predictions based on the results of the analysis was made and the results generalized on the population of study given that the test sample is part of the population. Statistical Package for Social Sciences (SPSS) was used to analyze quantitative data. Multiple Regression was applied to test the effect of independent variables on firm performance.

## **4. FINDINGS**

### **4.1 Response Rate**

The researcher collected data from firms registered with Kenya Association of manufacturers (KAM) as at June 2015. The study had a sample of 254 firms out of the 752 registered with KAM. The target sample was 254 owner/ senior managers out of which 215 responses were received accounting for 85% response rate. Sekaran (2008) argues that any response rate above

75% is classified as best and appropriate for any study. Mugenda (2012) avers that a response rate of 50% is adequate, 60% and above good and above 70% very good. The response rate of 85% found in this study is therefore quite adequate. This was in line with Orodho (2009) that a response rate above 50% contributes towards gathering of sufficient data that could be generalized to represent the opinions of respondents about the study problem in the target population.

#### **4.2 Creativity**

The variables considered for technological; expertise in the study were the use of internet in the firms operations, new applications for products, new products developments and whether the firms equipped employees with skills for their jobs. The questions required the respondents to choose the following responses; others, not at all, rarely, often, and very often. The results indicated that 35% of the respondents had the view that the firms often find new applications for products, 32% not at all, 27% rarely and 7% very often. The study sought opinion on the use of the internet, 38% were of the opinion rarely, 31% often, 16% very often and another 16% not at all. As to whether the management equips the employees with skills for their jobs 31% responded often, 29% rarely, 21% not at all and 19% very often.

The study result agrees with the finding of (Li and Tang, 2010) that creativity factors include technological expertise, teamwork and motivation. Amabile (2012) also outlines technological expertise, teamwork and motivation as drivers of creativity. In view of the above results, it can be concluded that SMMEs are involved in enhancing new applications of their products, equipping their employees with skills for their jobs and the use of network in their operations. This confirms that most SMMEs in Kenya have embraced technological expertise in their operations which in turn enhance creativity in their operations.

Teamwork variables considered in this study were brainstorming to stimulate new ideas among employees, development of teams, employee involvement in decision making and managers' involvement in asking opinions from employee about how to improve the customer services in the firms. The results of the finding indicated that 35% of the respondents were rarely involved in decision making, 31% often, 20% not at all and 14% very often. As to whether brainstorming was used to stimulate new ideas among employees, 33% responded often, 32% rarely, 28% not at all and 5% very often. As to whether managers seek opinion from employees 37% had the opinion of often, 27% rarely, 22% very often and 13% not at all. The results are in agreement with (Li and Tang, 2010) who concluded that creativity factors include technological expertise, teamwork and motivation. A study by Rick et al (2015) asserts that creativity is the driver of innovative activities in business and that the management of any business enterprise should invest in creative activities if they have to realize their objectives of improved performance. The findings confirm that the creation and development of creative ideas and their manifestations as new products are the core elements of an innovation strategy as creativity enhances the generations of new ideas.

In regard to motivation the study sought to investigate, the rewarding of employees who were involved in generating new ideas, participation in outdoor activities, recognition of one's performance and rewarding of employees for general performance. Majority of the respondents, (38%) were of the view that the firms often participated in outdoor activities, 30% rarely, and 17% not at all, and 15% very often. Opinion on whether the firm rewarded employees who generate new product ideas, 35% responded rarely 30% often, 31% not at all and 3% very often. Regarding recognition of one's performance, 34% responded rarely, 29% often, 23% not at all and 14% very often. As to rewarding of employees for general performance, 33% rarely agreed, 32% were for often, 19% very often and 17% not at all.

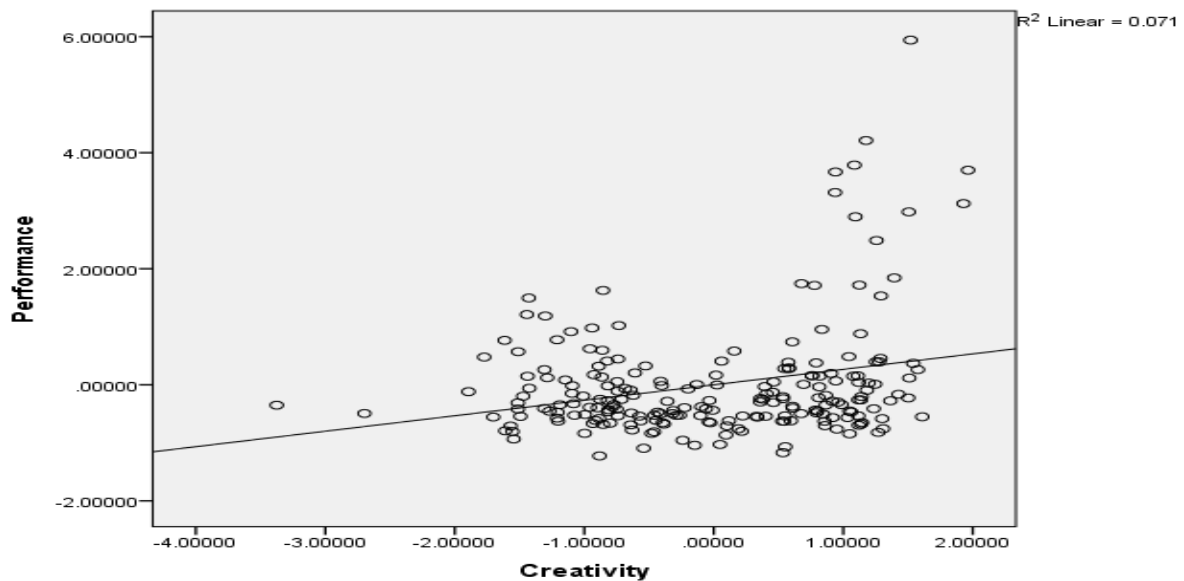
The results collaborate the findings by Hong et al (2013) that motivation enhances the morale of employees in an organization. The results also concur with the findings by Amabile (2012) who assert that intrinsic motivation arises from the individual's positive reaction to the qualities of the task itself such as interest, involvements, curiosity and satisfaction while extrinsic motivation arises from sources outside the task itself such as promised reward, meeting a deadline or winning a competition. The results confirm that motivation enhances creativity. SMEs should embrace creativity to empower them have the ability to develop new products, new ideas and discover new ways of identifying new business opportunities (Hans, 2014). Motivation can be intrinsic or extrinsic in nature. Intrinsic motivation arises from the individual's positive reaction to the qualities of the task itself such as interest, involvement curiosity and satisfaction while extrinsic motivation arises from sources outside the task itself such as a promised reward, meeting a deadline or winning a competition (Amabile, 2012). The social environment dynamics emphasizes creation of teams. Teamwork is an important element in organizational settings as it facilitates effectiveness and efficiency in an organization (Dul, Celyon& Jaspers, 2011).

### **Bivariate analysis of Creativity and performance of SMMEs**

The study assessed the influence of creativity on performance of Small and medium manufacturing enterprises in Kenya as stated in the first objective. Figure 4.1 shows the scatter plot of creativity and performance. The figure presents that all the plots appear in the first quadrante and the line of best of fit indicates an estimate line that is increasingly positively upwards. This implies that there is a positive linear relationship between creativity and performance of SMMEs. The study findings conforms by Asie (2015) who investigated the relationship between creativity and job innovation in employees of an industrial company. The



purpose of the study was to investigate the relationship between dimensions of creativity with performance.



**Figure 4.1: Scatter plot for creativity and performance**

From the study results in Table 4.1 the researcher presents the results of the relationship and explanatory power of the bivariate model for the influence of creativity and performance. The R value of 0.267 shows a positive linear relationship between creativity and performance. The  $R^2$  is the coefficient of determination which indicates that explanatory power of the independent variables is 0.071. This means that 7.1% of the variation in performance is explained by the variation of creativity in the model. The remaining 92.9% of the variation in the dependent variable is unexplained by this one predictor model but by other factors not included in the model

**Table 4.1: Model Summary Creativity and Performance**

		Performance	Creativity
Performance	Pearson's $\rho$	1	0.267**
	2-tailed Sig.		0.000
	N	214	214
Creativity	Pearson's $\rho$	0.267**	1
	2-tailed Sig.	0.000	
	N	214	214
R	0.267		
R Square	0.071		
Adjusted R Square	0.067		
Std. Error of the Estimate	0.966		

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

Table 4.2 shows: ANOVA analysis of Creativity and Performance of SMMEs. The ANOVA results show that the influence of creativity on performance of SMMEs in Kenya is significant. The p-value of the F-statistic as shown in the ANOVA table is 0.000 which is less than 0.05 implying general significance of the one parameter model thus implying that creativity significantly influences performance of SMMEs in Kenya. This is in line with the componential theory of creativity that is grounded in a definition of creativity as the production of new ideas or outcomes that are both novel and appropriate to some goal such as improving the overall performance of a firm (Amabile, 2012).

**Table 4.2: ANOVA analysis of Creativity and Performance of SMMEs**

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	15.211	1	15.211	16.299	.000
Residual	198.789	213	0.933		
Total	214	214			

The study results revealed a statistically significant positive linear relationship between creativity and performance of SMMEs ( $\beta = 0.267$ ,  $t = 4.037$  and  $p\text{-value} = 0.000$ ). The relationship was statistically significant because the  $p\text{-value}$  is less than 0.05. The model shows that every unit increase in the levels of Creativity leads to a 0.267 increase in performance of SMMEs in Kenya. This implies that organizations that promote elements of creativity such as technological expertise, teamwork and motivation tend to realize better performance. The resulting regression model that predicts the level of performance of SMMEs for a given level of Creativity is given by the equation below:

$$Y = 0.000 + 0.267X$$

Where

X is the independent variable, creativity

Y is the dependent variable, Performance of SMMEs

Several other studies also confirm these results. (Lowely, 2011; Rick et al 2015, Hong et al, 2013) also agree that creativity ascertain SMEs of their survival and improved performance. This is in line with a study by Celynon and Jasper (2011) who indicated that creativity facilitates effectiveness and efficiency in an organization. In their study on Does creativity really lead to innovation? Ozge and Mette (2011) also identified creativity as one of the most

important influential factors of product innovation ultimately leading to firm performance. Their findings showed a positive relationship between creativity and firm performance.

**Table 4.3: Coefficients table of Creativity and Performance of SMMEs**

Variable	$\beta$ coefficient	Std. Error	T	P-value.
(Constant)	0.000	0.066	0.000	1.000
Creativity	0.267	0.066	4.037	0.000

### Summary of the Study Findings

Quantitative data from factor analysis were used for statistical modelling to test the influence of Creativity on firm performance. Correlation analysis between Creativity and firm performance showed that there was positive relationship between Creativity and firm performance. A regression analysis was carried out to determine the influence of Creativity on firm performance. The regression model had a positive coefficient of determination implying that Creativity explains the variation in firm performance in the model. The coefficients of the regression model was also found to be positive for Creativity

### Recommendations

The study derived various recommendations from the results, findings and conclusion. First the management of SMMEs can use the findings of this study to introduce novel products or they can significantly improve the existing products with respect to their characteristics or intended uses to boost their sales and ultimately improve their performance Secondly the managers should embrace Creativity to maximize on financial benefits of product innovation. Secondly the management of SMMEs should emphasize product innovation concepts such as

technological expertise, motivation and team - work through incorporating them in their Vision and Mission statements

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