

## **THE LINK BETWEEN STRATEGIC ALLIANCES AND PERFORMANCE OF KENYAN MANUFACTURING FIRMS IN THE EAST AFRICAN COMMUNITY MARKET**

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### **Abstract**

The specific objective of the study was to determine the effect of strategic alliances on the performance of Kenyan manufacturing firms in the East African Community market. The study was anchored on resource dependency theory (main anchoring), Resource Based View, Integration theory and the Open system theory. The positivism philosophical paradigm and a cross sectional descriptive survey design adopted guided the study. The population of the study was 160 Kenyan manufacturing firms in the EAC market. Primary data was collected using a semi-structured questionnaire. A response rate of 81.88% was realized. Secondary data was collected from financial statements of the respective firms. Data was analyzed using descriptive and inferential statistics. Hypotheses were tested using both simple and multivariate regression analysis. The findings indicated that strategic alliances had a strong statistically significant influence on the performance of Kenyan manufacturing firms in the EAC market. This finding supported the Resource Based View proposed by Penrose (1959) that firm specific resources explain competitive advantages. The study has certain limitations; a cross-sectional survey approach method was used for the study and data was collected at only one point in time, which may bias the findings; single respondent was used in data collection, which may bias or determine the nature of responses. Future research directions include a replication of study in a longitudinal approach while using path analysis or structural equation models and consideration of other sectors, firm characteristics and resource constraints.

**Keywords:** Strategic Alliances, Firm Performance, Kenyan Manufacturing Firms and East African Community Market, Resource Dependency Theory

## Introduction

Strategic alliances among firms are gaining momentum in cross-border frameworks resulting to strategic cross-border alliances. Strategic cross-border alliances are strategic partnerships formed between two or more firms from different countries for pursuing mutual interests through sharing their resources and capabilities (Doz & Hamel, 1998). Beyond the export and foreign direct investment (FDI) forms, it has become a trend lately for firms to use cross-border strategic alliances in order to extend their businesses globally (Qiu, 2006).

Strategic alliances are partnerships of two or more corporations or business units that work together to achieve strategically significant objectives that are mutually beneficial to the parties (Wei, 2007). The potential of strategic alliances strategy is enormous and if implemented correctly, it can dramatically improve an organization's operations and competitiveness (Aun, 2014). Strategic alliances can take different forms including; an alliance of strong partners who are direct competitors, alliance between strong and weak partners, an alliance between those who are weak and seek to gain power, between complimentary equals, or even a merger that results in formation of a new organization altogether (Ybarra & Turk, 2011).

Strategic alliances are sometimes referred to as inter-firm cooperative relationships and take a variety of differing forms: advertising 'tie-ins', "data links between customer and supplier, sole source suppliers and true joint ventures (Birnbirg, 1998). This study will measure the dimensions of strategic alliances as joint venture, equity strategic alliances and non-equity alliances (Hung & Chang, 2012).

In order to mitigate against the shortcomings, Kaplan and Norton (1992; 1996) recommended a balanced score card (BSC) approach incorporating financial and non-financial indicators. Hubbard (2009) names the Balanced Scorecard (BSC) proposed by Kaplan and Norton (1992, 1996) as the most prevailing performance measurement model, based on stakeholder's theory propositions that a firm has multiple responsibility to a wider set of constituencies other than the shareholders.

The BSC approach propose financial indicators to include Return on Assets, Return on Equity and Dividend yields and complimented by non-financial measures which includes customer perspective, internal business process and organizational learning and growth (Williams Jr, 2015). Subjective or non-financial measures of performance seek respondent's opinion about firm performance. Customer perspective measures how well the business is satisfying the needs of the customer (Zairi, 2000)). Internal business process measures how efficiently and effectively an organization is meeting its goals and objectives by measuring the innovation and development of business (Brewer, 2000). The other non-financial perspective is learning and growth that measures the innovation and development of the business in a competitive environment (Hoque, 2005). Financial performance in the study is measured by Return on Assets (ROA), Return on Equity (ROE), dividend yield. ROA measures how much profit a firm can achieve using one unit of assets. It helps to evaluate the results of managerial decisions or use of assets. ROE measures the earnings generated by shareholder's equity of a period usually one year. Dividend yield compares relative attractiveness of various dividends paying stock.

The strategic alliances and firm interface are mainly anchored by Resource Dependency theory (Pfeffer & Salancik, 1978), which has postulations of resource interdependency. The Resource Dependence Theory (RDT) contends that the motivation of other firms depending on another firm is the possession of the critical resources that is required for the said firms to gain competitive edge (Pfeffer & Salancik, 1978). RDT recognizes the influence of external factors on firm's behaviour and, although constrained by their context, managers can act to

reduce ecological uncertainty and dependence. Central to reduction of these environmental happenings is the concept of power, which is the control over vital resources (Ulrich & Barney, 1984).

The aim of EAC is to make it People centered, market driven and private sector led by and by gradually establish among themselves a Customs Union, a Common Market, a Monetary Union, and ultimately a Political Federation of the East African States. The main objectives of creating the EAC are to form one single customs territory with trade at its core, support economic development through the creation of economies of scale and develop the human resource, institutions and infrastructure that will support trade (McIntyre, 2005).

The Treaty Establishing EAC stipulates the several operating principles to enhance policy harmonization and integration in the EAC region. The East African Community integration process conceptualized passing four stages discusses below to control and stiffen the social, cultural, commercial, industrial, political, infrastructural, and additional associations among the member states industrial, commercial, infrastructural, cultural, social, political, and other relationships of the member nations Article 5(2) of the treaty establishing East African Community (McIntyre, 2005).

### **Research Problem**

The role of the manufacturing sector in Vision 2030 aims at creation of employment and wealth with the sector's specific focus being to increase its contribution to GDP by 10% per annum as a minimum. A number of interventions are proposed in the Vision aimed at making Kenya globally competitive and prosperous. The objectives to be pursued are to; strengthen the capacity and local content of domestically manufactured goods; increase the generation and use of R&D results; raise the share of products in the regional market from 7% to 15%; develop niche products for existing and new markets (Were, 2016)."

The choice of manufacturing sector as a key focus area by the government of Kenya in the recent past, is because Kenya occupies a dominant position in supplying the EAC region with manufactured goods with Uganda as her biggest trading partner (Were, 2016). Through the manufacturing sector, the 'big four' development plan intends to create jobs for the youth by scaling-up industrial activities in the manufacturing sector (Felipe, Mehta & Rhee, 2018).

The primary issue over time in strategic management has been how to enhance performance in firms (Lefort, McMurray & Tesvic, 2015). The changes and predictability in the external environment in which firms operate determines how they fit and their eventual performance (Machuki, 2011). However, how firms respond to exigencies in the external environment largely differentiates better performance from poor performance (Tan & Litschert, 1994; Hoskisson, Wan, Yiu and Hitt, 1999). The choice of a strategic response is partly determined by firm's strategic choices because firms have to gauge the turbulence in the environment in order to identify strategic partners who have equal or greater degree of aggressiveness (Ansoff and McDonnell, 1990; Teece et al, 1997). Identification of specific responses in tandem with particular strategic choices may explain variations in performance.

The following are the notable research gaps guiding this study. The relation between strategic alliance formation and firm performance shows contradicting evidence in the existing empirical research. Where Powell et al., (1999), Stuart (2000), Sarkar et al., (2000), Timothy & Teye (2008) and Mlenga, (2012) find a positive connection between strategic alliance formation and firm performance, Callahan (2006) measures an increase in operating risk as well as a negative effect on firm performance. The research work of Callahan (2006) provides support for this negative connection. Despite the great emphasis on the link between strategic alliance and firm performance, the studies that uniquely investigated moderating effects of regional integration and macro-environment on the relationship between strategic

alliances and firm performance are yet to be documented. Past empirical studies have shown diminishing returns with a somewhat weaker fit into the relationship between strategic alliances and firm performance since the optimal number of alliances is likely to differ amongst firms in practice (Deeds & Hill, 1996; Hoang & Rothaermel, 2003; Timothy & Teye, 2008; Mlenga, 2012).

Studies have tried to link strategic alliances and organizational performance with diverse conclusions. Douma, Bilderbeek, Idenburg and Looise (2000) did a study supporting the complex and dynamic process of alliance building on performance using Pearson correlation and concluded that key resource sharing is important in enhanced performance.

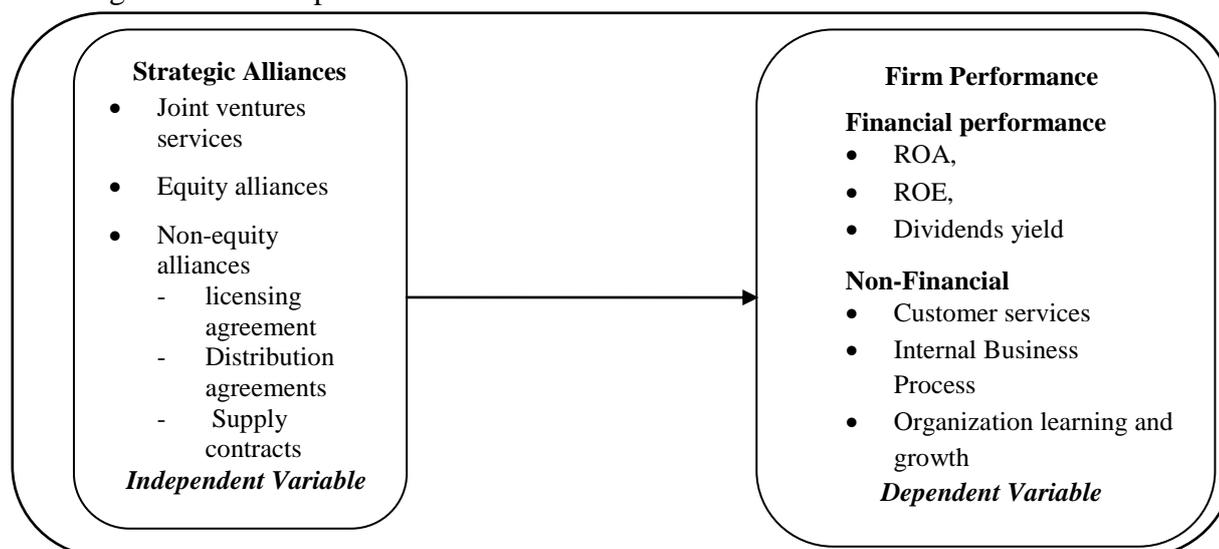
Chesang (2012) studied merger restructuring and financial performance among commercial banks in Kenya and concluded that restructuring merger is very important in enhancing the overall organizational performance especially for those firms considered weak and ailing and narrower business opportunities. Another study by Almeida, Song and Grant (2002) on superiority of firms to markets and strategies found that knowledge building on macro environment enhances organizational performance because of cross border alliances. This is argued in the sense that strategic alliances along the border are well interpreted to enhancing performance of the involved organizations through knowledge of macro environment functions. In essence, therefore this study concludes that strategic alliances are a key tool in enhancing performance of organizations that seek cross border relationships with other firms through transfer of resources and necessary capabilities. Consequently, in an effort to address the above gaps the study sought to answer the question; what is the influence of strategic alliances on performance of Kenyan Manufacturing firms in the East African Community Market?

The objective of this study was to establish the effect of strategic alliances on the performance of Kenyan manufacturing firms in the East African Community market.

### ***Conceptual Model and Hypothesis***

The conceptual model in figure 1 below is in support for the arguments raised from literature review.

Figure 2.1: Conceptual Model



Source: Author, 2018

The following hypotheses were tested:

**H<sub>A1</sub>**: Strategic alliances have a significant statistical effect on the performance of Kenyan manufacturing firms in the East African Community market.

*Sub hypotheses:*

**H<sub>1a</sub>**: Strategic alliances have a significant statistical effect on the financial performance of Kenyan manufacturing firms in the East African Community market; and

**H<sub>1b</sub>**: Strategic alliances have a significant statistical effect on the non-financial performance of Kenyan manufacturing firms in the East African Community market.

## **Methodology of Research**

### **Research philosophy**

Research philosophy refers to a system of beliefs and assumptions based on the development and nature of that knowledge (Saunders, Lewis & Thornhill, 2016). In social sciences, there are two key philosophical orientations namely; positivism and phenomenology (Hayes, 2013). This study is positivistic in nature and is modeled under the positivism paradigm that advocates for theory testing and empirically establishing a link between the study variables through generalization and predictions (Saunders & Bezzina, 2015).

At the heart of social science research philosophies lies two main viewpoints namely, positivism and phenomenology. Other philosophies include; Ontology, Epistemology, Positivism, Realism, Interpretivism, and Axiology. Positivism presumes that the social world exists objectively and externally and that knowledge is valid only if it is based on independent observations with the outcomes being generalizable and replicable (Cooper & Schindler, 2008).

Phenomenology on the other hand holds that meanings on reality and phenomena are constructed and reconstructed through qualitative approaches (Racher & Robinson, 2003). Under positivism, the researcher follows a step by step method starting with deductive reasoning, formulating hypothesis and operationalizing of the study variables based on existing theory then deducing the observations to determine the truth or falsify the hypothesis (Bryman, Bell, Mills, Albert & Yue, 2011). Hammond and Wellington (2013) posit that social behavior studies should be examined using the same techniques as those used to investigate natural sciences studies.

This study was based on a positivist philosophy. The main reason for the study to adopt the positivist philosophy was based on the argument that positivism approach is focused on theory testing as opposed to epistemology which is theory building. According to Saunders (2011), this kind of philosophy is quantitative as opposed to phenomenology which is basically a qualitative approach.

The positivist orientation enabled hypotheses testing, acceptance or rejected based on the tested results thus leading to further research (Ravitch & Riggan, 2012). Positivism seeks to unveil the fact or causes of social phenomena. The study sets to empirically and objectively analyze the relationships existing among the variables in question.

### **Research Design**

This particular study adopted a descriptive cross-sectional survey design. Descriptive studies are concerned with finding out what, when and how much of the phenomena under study (Cooper & Schindler, 2003). A cross sectional survey considers a study unit of a population at a certain point in time to allow for conclusions about phenomena under study and the entire population. The research design is suitable in the evaluation and examination to establish patterns of interrelationships amongst the study variables (Sekaran & Bougie, 2013). The research design was envisaged to offer the researcher an opportunity to collect data across different organizations and empirically test the relationship of the constructs along its conceptualization. Mugenda and Mugenda (2003) posit that “cross-sectional studies enable the researcher to establish if significant relationships among variables exist and the strength of these relationships. Machuki (2011) opine that the research design is guided by the purpose of the study, the type of investigation, the extent of researcher involvement, the stage of knowledge in the field and the type of analysis. The foregoing design has been used successfully by Mkalama, (2014) and Guo & Kga, (2012).

### ***Population of the Study***

The population of the study was the Kenyan manufacturing firms in the EAC market. According to the East African Business Council (EABC) there are 160 Kenyan manufacturing firms formally operating in the EAC region. The list of the Kenyan manufacturing firms in the EAC market is attached as Appendix III. The main reason for studying the manufacturing firms is because manufacturing is key pillar of economic transformation through contribution to the Gross Domestic Product (GDP) and creation of jobs which are critical factors in the growth of the Kenyan Economy. The manufacturing sector in Kenya grew at 3.5% in 2015 and 3.2% in 2014, contributing 10.3% to gross domestic product (GDP) (Were, 2016). The manufacturing firms were subjected to membership of the Kenya Association of Manufactures (KAM) and/ or Kenya Private Sector Alliance (KEPSA) and/ or East African Business Council (EABC) guidelines and regulations on operational related matters.

The East African Business Council (EABC) and Kenya Association of Manufacturers (KAM) membership report observe that dynamism and changing environment in the regional market, the number of Kenyan Manufacturing firms operating in the EAC regional market is likely to keep changing as new ones join the regional market and others exit depending on their performance, purpose or other strategic factors. All the Kenyan manufacturing firms in EAC region were surveyed thus a census survey was considered. Israel (2012), posits that cost considerations make census technique impossible for large populations and thus census is attractive for small populations. Kothari (2004) further states that a census eliminates sampling error and provides data on all the individuals in the population. Okiro, Aduda and Omoro (2015) used census in a study targeting performance of companies listed at the East Africa Securities exchange.

### ***Data Collection***

Data in research is referred to as those facts collected for further investigation (Saunders, Lewis & Thornhill, 2016). Data collection techniques therefore enable the scholar to systematically collect information on research variables in the setting of occurrence and from the selected target population (Gill & Johnson, 2010). Research instruments refer to tools used to select, gather and collect data during the research process (Hammond & Wellington, 2013). The various data collection techniques used generally in social research include, questionnaires, interviews, standard tests and observation forms (Gill & Johnson, 2010). Structured questionnaires are appropriate for research studies since data is collected as

requested by the researcher, is affordable and can easily be analyzed and replicated. Dillman, Smyth and Christian (2014) caution that care must be taken as it is difficult to ascertain how truthful a respondent may be or how much thought a respondent has put in the process.

Primary data was collected by using semi-structured questionnaires attached as appendix one. Secondary data was extracted from the documents of the published Kenyan manufacturing firms operating in the EAC market including past financial statements, customer satisfaction survey reports, Internal business, learning and growth manuals and policy documents kept under custody of the KAM and EABC. All other documents which have a bearing on the topic being studied were used to complete the answers given in the questionnaires. The main respondent from each company was the CEO or their departmental heads dealing with functions related to strategy and regional markets. This is because they were deemed to have good knowledge about the issues being studied (Kelley & Maxwell, 2003). To enhance the completion rate, an email or text message reminder was sent after every five days to the yet to receive respondents till the response rate was deemed satisfactory.

The research questionnaires were also distributed using the drop-off and pick-up later survey method and email communication. This survey method has been suggested by scholars as an effective alternative to the post mail or telephone methods (Cooper & Schindler, 2014). The structured questionnaire was based on five-point Likert-type scale questions. In a Likert-type scale, subjectivity is minimized and the researcher may carry out quantitative analysis (Hammond & Wellington, 2013). The questionnaire had been designed on a five-point Likert-type scale and ranged from (1) -not at all to (5) - a very large extent. Likert-type scale is the most frequently used tool of the summated rating scale and consists of statements that express either a favourable or unfavourable attitude towards the object of interest. Using the Likert-type scale, the respondent will be asked to agree or disagree with each statement (Cooper & Schindler, 2006).

The research instrument consisted of questions from previous empirical studies, theory and the researchers own questions based on the context of the study. The questionnaire was divided into five sections. Part A contained general information including mainly the demographics of the respondent. Part B covered strategic alliances while Part C covered data on regional integration. Part D covered data on macro environment while the last Part E covered data on firm's performance.

### ***Reliability Test***

Reliability is the consistency of measurement and concerned with estimates of the degree to which a measurement is free of random or unstable error (Cooper & Schindler, 2014). Reliability of a measure indicates the magnitude to which a measure is bias free which ensures consistency in the measuring instrument (Sekaran & Bougie, 2013). Strategies to enhance reliability of research results include; objectively scoring results, training of researchers and use of a reasonable rating scale (Dillman et al., 2014). Creswell (2014) identified several methods of assessing reliability namely; Cronbach's alpha for internal consistency, inter-rater reliability and parallel reliability. Hayes (2013) demonstrated that the Cronbach's alpha for internal consistency involves a one test administration to measure the reliability of results across a set of items. The intra-rate reliability tests describe each rater's consistency of the same observation over time and may try to establish whether two observations are consistent. The parallel reliability tests are a measure of reliability attained by administering different versions of a research assessment tool to identical groups of respondents (Hammond & Wellington, 2013).

This research study adopted the Cronbach's alpha coefficient test for internal consistency. Nunally (1978) and Gliem and Gliem (2003) recommends a Cronbach's alpha value of 0.7 and above as desirable, whereas, Cooper and Schindler (2014) suggest a range of 0.7 to 0.9 Cronbach's alpha coefficient to be good for reliability test. The current study had a reliability cut-off point coefficient of 0.7. In order to test the research instrument for internal reliability, a pilot study of ten (10) firms were required to respond to the research questionnaire and report any ambiguous questions, identify any defects in the questions or lack of clarity in the instructions as well as suggest any changes. Primary data was obtained from the CEOs or Managers responsible for cross border business due to the fact that these individuals hold key positions in the firms and are commercially well versed to provide the requested information. The results from the pilot study indicated that a number of variables had accepted levels of alpha values. From the outcome of the pilot study, the research questionnaire was revised and used in collecting the survey data for the study.

### ***Validity Test***

Validity refers to the questionnaire's ability to measure what is intended meaningfully and describe the construct accurately (Cooper & Schindler, 2014). Mugenda & Mugenda, 2003, refers validity test as the degree to which the results obtained from the analysis of the data collected represent the phenomenon under study. Validity is used in science as evaluation criteria on whether conclusions made in a study explain what happened accurately. Aiken, West and Reno (1991) further stated that validity refers to whether the research instrument is able to produce the expected measurement in a study. It determines whether the research instrument truly measures what it is intended to measure with precision (Babour, 1998). The research instrument should allow the researcher to hit the bull's eye of the research objective and the results represent general population of the study (Golafshani, 2003).

Pre-testing for validity of the questionnaire initially involved a few respondents from the study population to improve the instrument. Construct and criterion validity were carried out on the instrument by randomly pilot testing 10 senior managers dealing with cross border business from different associations of the manufacturing firms to establish if the respondents could answer the responses. The final survey did not consider these pilot groups. Questions that were unclear, inadequate or sensitive were cleaned, sorted or dropped. The study incorporated views of content experts consisting of a few lecturers from University of Nairobi, the supervisors and the researcher's group in the School of Business, University of Nairobi. The outcome of the pilot test was better review of the instrument, clear instructions and clarification on the measures to be captured that avoided unreliable results.

Factor analysis was applied to test validity construct. Construct validity shows how the instrument is measuring the target construct (Zapolski, Guller & Smith, 2012). In extracting the factors, Principal Component Analysis was used and Varimax rotation method applied to rotate the factors. The factors attributed to the variables were all uni-dimensional thus considered valid measurement of the study constructs.

The four ways of establishing validity include; face validity, content validity, criterion validity and construct validity (Bush, 2007). To enhance face validity, the research instrument had been enhanced using expert opinion obtained during various proposal examinations at the University of Nairobi. Additionally, a pilot study was conducted by subjecting the instrument to a small sample of three organizations to enhance content validity and determine respondent's understandability of the questions and where necessary changes were made. Finally, questions in the instrument were adopted and enhanced from previous studies.

**Data Analysis and Findings**

**Data Analysis**

The analytical models used are shown in Table 3.1. All the statistical tests were conducted at 95 percent confidence level.

Table 3.1: Hypotheses, Analytical Statistical Models and Interpretation of Results

Objective	Hypothesis/ Sub hypotheses	Analytical techniques	Interpretation
To establish the effect of strategic alliances on the performance of Kenyan manufacturing firms in the East African Community market;	<p><b>H<sub>A1</sub></b>: Strategic alliances have a significant statistical effect on the performance of Kenyan manufacturing firms in the East African Community market.</p> <p><i>Sub hypotheses:</i></p> <p><b>H<sub>1a</sub></b>: Strategic alliances have a significant statistical effect on the financial performance of Kenyan manufacturing firms in the East African Community market; and</p> <p><b>H<sub>1b</sub></b>: Strategic alliances have a significant statistical effect on the non-financial performance of Kenyan manufacturing firms in the East African Community market.</p>	<p>Simple Regression analysis</p> $Y_1 = \alpha_{10} + \beta_{11}X_1 + \beta_{12}X_2 + \beta_{13}X_3 + \varepsilon_1 \dots \dots \dots (i-a)$ $Y_{1a} = \alpha_{10} + \beta_{11}X_1 + \beta_{12}X_2 + \beta_{13}X_3 + \varepsilon_1 (i-b)$ $Y_{1b} = \alpha_{10} + \beta_{11}X_1 + \beta_{12}X_2 + \beta_{13}X_3 + \varepsilon_1 \dots \dots \dots (i-b)$ <p>Where:</p> <p>Y<sub>1</sub>= Financial performance</p> <p>Y<sub>1a</sub>= Financial performance</p> <p>Y<sub>1b</sub>= Non-Financial performance</p> <p>α= constant (intercept)</p> <p>β<sub>11-13</sub>= Coefficient parameters to be determined</p> <p>X<sub>1</sub>= Joint venture alliances</p> <p>X<sub>2</sub>= Equity alliances</p> <p>X<sub>3</sub>= Non-equity alliances</p> <p>ε<sub>1</sub> = Error term</p>	<p>R<sup>2</sup> depicts model fitness and also explains the changes in dependent variable.</p> <p>β<sub>11-13</sub>, are the coefficients explaining the influence of a unit change in each of the strategic alliances constructs on performance.</p> <p>P-value, F-ratio and t-statistic explains the significance of the model constructs.</p>

Source: Researcher (2018)

**Response Rate**

The study was a descriptive cross-sectional survey of 160 manufacturing firms operating in the EAC Market. Each manufacturing organization is believed to exhibit uniqueness in relation to the strategic alliances practices embraced, regional integration, strategic leadership characteristics and performance.

The questionnaires were self-administered with the help of well-trained research assistants. The study targeted 160 respondents; however, the researcher received response from 131 respondents forming 81.88% response rate, which was considered adequate for analysis. This represented a response rate of 81% as indicated in Table 4.1.

Table 4.1: Distribution of Response Rate

Responses	Frequency (N)	Percentage (%)
Total Response	131	81.88
Non-Response	29	18.12
<b>Total</b>	<b>160</b>	<b>100</b>

**Source: Research Data, 2018**

Therefore, this study's response rate is considered very good for survey research as recommended by Punch (2003) who proposes a score of 80-98% as good response rate, whereas Mugenda and Mugenda (1999) suggest a 50% response rate is adequate, 60% good and above 70% very good.

The response rate further is supported by Fowler (1988) suggests that a response rate of 60% is representative of the population of the study. Such a high response rate for this study can be attributed to the use of introductory letters from the University and NACOSTI explaining the purpose and nature of the study, researchers reliable networks in the sector as well as the use of trained research assistants were equipped with skills on how to build rapport with respondents. The introduction letters from KAM, KEPSA and EABC were also useful in dissipating suspicion by firms about the intentions of the study and encouraging cooperation during the data collection process. The relationship management approach and personal networks amongst the business community operating in the region by the researcher were useful in getting a very good response rate.

### **Reliability Tests**

Reliability is a measure of the degree to which instruments yield consistent results or data after repeated trials (Kimberlin & Winterstein, 2008; Mugenda & Mugenda, 2003). It establishes if the measure is able to yield same results on other occasions or that similar observations are reached by other observers. A pilot study using volunteers from five manufacturing organizations that were not included in the sample was undertaken. The questionnaire was developed by adopting some of the existing scales from extant literature (Kinuu, 2014; Mutuku, KObonyo, Awino & Musyoka, 2013; Muchemi, 2013; Waweru, 2011).

The study further takes in to account the argument that, it is important that the measurement instrument is reliable for it to measure consistently (Mugenda and Mugenda, 2003; Saunders, 2007; Cooper and Schindler, 2014). Cronbach coefficient was used to assess the internal consistency or average correlation of items within the test. The coefficient alpha value ranges from zero (no internal consistency) to one (complete internal consistency) were used.

Cronbach coefficient, which was used to assess the internal consistency or average correlation of items within the test, was used. Alpha equals zero when the true score is not measured at all and there is only an error component. Alpha equals 1.0 when all items measure only the true score and there is no error component. If the values are too low, either too few items were used or the items had little in common (Nunnally, 1998). His suggestion is that of a value of not less than 0.7 to be acceptable while Sekeran (2003)' posits that any values between 0.5 and 0.8 are adequate to accept internal consistency. Table 4.2 presents the alpha values of the questionnaire items.

The results of the reliability tests carried out in Table 4.2 show that strategic alliances had the lowest coefficient ( $\alpha = 0.714$ ). Nunnally (1978) recommends Cronbach's alpha coefficient of 0.7 as the cut-off point for reliability, Davis & Bruin (1964) suggests 0.5 as the

minimum reliability coefficient. While Sekeran (2003) posits that any values between 0.5 and 0.8 are adequate to accept internal consistency. The results for all the variables are above the 0.7. This was confirmation of reliability and validity of the data used to draw conclusions from theoretical concepts.

Table 4.2: Reliability Tests

Variable	Variable constructs/Indicators	No. of Items	Cronbach's alpha value	Decision
Strategic alliances	<ul style="list-style-type: none"> <li>• Joint ventures services</li> <li>• Equity alliances</li> <li>• Non-equity alliances                             <ul style="list-style-type: none"> <li>- licensing agreement</li> <li>- Distribution agreements</li> <li>- Supply contracts</li> </ul> </li> </ul>	17	0.714	<b>Reliable</b>
Firm performance	<ul style="list-style-type: none"> <li>• Financial Customer services</li> <li>• Internal Business Process</li> <li>• Organization learning and growth</li> </ul>	28	0.880	<b>Reliable</b>

Source: Research Data, 2018

### Validity Test

Validity is the ability of the research instrument to measure what is supposed to measure (Cooper & Schindler, 2006). If the instrument contains a representative sample of the universe subject matter, then the validity is good. There are various types of validity including construct, content, face and criterion related validity. In this study content and construct validity were measured. Content validity is the extent to which the instrument provides adequate coverage of the investigative questions guiding the study. Content validity is also known as logical validity and refers to the extent to which a measure represents all facets of a given social construct.

The researcher used expert judgment from a few lecturers of the University of Nairobi, School of Business, the supervisors and the researcher's seniors in the School of Business, university of Nairobi. The questionnaire was also pilot tested by administering to a few manufacturing organizations CEOs among those not under this study to establish if the respondents could answer the responses with ease. Ambiguous, double edged and sensitive questions were cleaned, sorted or dropped. This was successfully done by Machuki (2011) and Munyoki (2007).

### Test of Normality

The Shapiro-Wilk test was employed to test for normality. This test establishes the extent of normality of the data by detecting existence of skewness or kurtosis or both. Shapiro-Wilk statistic ranges from zero to one with figures higher than 0.05 indicating that the data is normal (Razali and Wah, 2011).

Table 4.3: Test of Normality

Study Variables	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Strategic Alliances	.096	131	.005	.969	131	.204

Firm Performance	.086	.131	.019	.978	.131	.232
a. Lilliefors Significance Correction						

**Source: Research Data, 2018**

Normality was tested using the Shapiro-Wilk test and the results showed that all the variables were above 0.05 ( $p > 0.05$ ) hence confirming data normality. Normality assumes that the sampling distribution of the mean is normal. As shown in Table 4.2, p-values for the Sharipo-Wilk tests were 0.204 for strategic alliances, 0.100 for regional integration, 0.400 for macro environment and 0.232 for firm performance.

### ***Test of Multicollinearity***

Multicollinearity is a phenomenon whereby high correlation exists between the independent variables. It occurs in a multiple regression model when high correlation exists between these predictor variables leading to unreliable estimates of regression coefficients. This leads to strange results when attempts are made to determine the extent to which individual independent variables contribute to the understanding of dependent variable (Creswell, 2014).

The consequences of Multicollinearity are increased standard error of estimates of the Betas, meaning decreased reliability and often confusing and misleading results. Multicollinearity test was conducted to assess whether high correlation existed between one or more variables in the study with one or more of the other independent variables. Variance inflation factor (VIF) measured correlation level between the predictor variables and estimated the inflated variances due to linear dependence with other explanatory variables. A common rule of thumb is that VIFs of 10 or higher (conservatively over 5) points to severe multi-collinearity that affects the study (Newbert, 2008). A tolerance threshold value of below 0.2 indicates that collinearity is present (Menard, 2000). Table 4.4 presents the result of tests for Multicollinearity.

Table 4.4: Test for Multicollinearity

<b>Coefficients<sup>a</sup></b>		
<b>Model</b>	<b>Collinearity Statistics</b>	
	<b>Tolerance</b>	<b>VIF</b>
Strategic Alliances	.954	1.049
a. Dependent Variable: Firm Performance		

**Source: Research Data, 2018**

As shown in Table 4.4 the results revealed no problem with multicollinearity. The variables of the study indicated VIF values of between 1.049 and 1.212 which is less than the Figure recommended by the rule of thumb. This indicated that the data set displayed no multicollinearity.

### ***Test of Homoscedasticity***

Homoscedasticity was measured by Levene's test. This test examines whether or not the variance between independent and dependent variables is equal. If the Levene's Test for Equality of Variances is statistically significant  $\alpha = 0.05$  this indicates that the group variances are unequal. It is a check as to whether the spread of the scores in the variables are approximately the same.

Table 4.5: Tests for Test of Homogeneity of Variances

Study Variables	Levene Statistic	df1	df2	Sig.
Strategic Alliances	2.495	20	103	.071

Source: Research Data, 2018

From the results in Table 4.5, P-values of Levene’s test for homogeneity of variances were greater than 0.05. The test therefore was not significant at  $\alpha = 0.05$  confirming homogeneity.

### Hypothesis Testing

The study sought to establish the influence of strategic alliances on firm performance of Kenyan manufacturing firms in EAC market. The hypothesis was:

*H<sub>A1</sub>: Strategic alliances have a significant statistical effect on the performance of Kenyan manufacturing firms in the East African Community market.*

The study first tested the independent effects of strategic alliances dimensions on the overall firm performance measures before testing the sub hypotheses that sought to establish the effect of strategic alliances on financial and non-financial performance. This was through performing a regression analysis to determine and test the hypothesis for the existence of a link between individual strategic alliances (joint services and cooperation, equity alliances and non-equity alliances) on overall firm performance. Composite mean indices derived from non-financial performance attributes. Composite index on financial performance was derived from the three measures of performance (ROA, ROE and Dividend Yield) before finding the overall logit firm performance index with 50:50 weighting of the non-financial composite mean and composite financial performance index. Then the first hypothesis tested through multiple regression analysis is:

Table 5.1: Model Goodness of fit of Strategic Alliance Attributes and Firm Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.738a	.545	.534	.64370

a. Predictors: (Constant), Non-Equity Alliances, Joint services and cooperation, Equity Alliances

As presented in table 5.1 above, 53.4% (Adjusted  $R^2 = 0.534$ ) of variations in the overall firm performance is explained by variations in the strategic alliances namely Joint service contracts (JSC), Equity alliances (EA) and Non-equity alliances (NEA).

Table 5.2: Model Overall Significance of Strategic Alliance Attributes and Firm Performance (ANOVA<sup>a</sup>)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	62.975	3	20.992	50.662	.000 <sup>b</sup>
	Residual	52.622	127	.414		
	Total	115.597	130			

a. Dependent Variable: LnFinancial Performance (Final Index)

b. Predictors: (Constant), Non-Equity Alliances, Joint services and cooperation, Equity Alliances

Table 5.2 presents that the model is statistically significant in explaining the relationship between the strategic alliances attributes and overall firm performance,  $F(3,127) = 50.662, P > 0.05$ .

As presented in table 5.3, using standardized coefficients the joint service contracts have a weak positive effect on firm financial performance ( $\beta = 0.343, t = 5.017, P > 0.05$ ), Equity alliances has a strong positive effect on firm performance ( $\beta = 0.541, t = 7.541, P > 0.05$ ), None equity alliances has a weak negative effect on firm performance. ( $\beta = 0.066, t = -1.001, P > 0.319$ ). The relationships derived are statistically significant.

Table 5.3: Regression Coefficients of Strategic Alliance Attributes and Firm Performance Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.830	.641		4.418	.000
	Joint services and cooperation	.694	.138	.343	5.017	.000
	Equity Alliances	1.222	.162	.541	7.541	.000
	Non-Equity Alliances	-.174	.173	-.066	-1.001	.319

a. Dependent Variable: Firm Performance

The regression equation derived was thus as follows:

$$Y_1 = 0.343JSC + 0.541EA - 0.066NEA$$

Where:

$Y_1$  = Firm performance

JSC = Joint services and cooperation

EA = Equity alliances

NEA = Non-equity alliances

The regression model suggests that firm performance index is constant at 2.830 and a unit increase in Joint service contracts increases financial performance by 0.343 units, a unit increase in Equity alliances increases firm performance by 0.541 units and a unit increase in non-equity alliances decreases firm performance by 0.109 units. The findings therefore confirm hypothesis 1 that strategic alliances have a significant statistical effect on the performance of Kenyan manufacturing firms in the East African Community market.  $H_1$  is therefore supported.

The first sub hypothesis tested through stepwise regression analysis is:

$H_{1a}$ : *Strategic alliances have a significant statistical effect on the financial performance of Kenyan manufacturing firms in the East African Community market*

Table 5.4: Model Goodness of fit of Strategic alliance attributes and Financial Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.518a	.268	.251	1.78553

a. Predictors: (Constant), Non-Equity Alliances, Joint services and cooperation, Equity Alliances

As presented in table 5.4, 25.1% (Adjusted  $R^2 = 0.251$ ) of variations in firm financial performance is explained by variations in the strategic alliances namely Joint service contracts (JSC), Equity alliances (EA) and Non-equity alliances (NEA).

Table 5.5: Model Overall Significance of Strategic Alliance Attributes and Financial Performance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	148.353	3	49.451	15.511	.000b
	Residual	404.892	127	3.188		
	Total	553.245	130			

a. Dependent Variable: LnFinancial Performance (Final Index)

b. Predictors: (Constant), Non-Equity Alliances, Joint services and cooperation, Equity Alliances

Table 5.5 presents that the model is statistically significant in explaining the relationship between the strategic alliances attributes and firm performance,  $F(3,130) = 15.511, P > 0.05$ .

Table 5.6: Regression Coefficients for Strategic Alliance Attributes and Firm Financial Performance Model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	9.549	1.777		5.374	.000
Joint services and cooperation	1.270	.384	.286	3.309	.001
1 Equity Alliances	1.783	.450	.361	3.966	.000
Non-Equity Alliances	-.667	.481	-.117	-1.388	.168

a. Dependent Variable: Financial performance

As presented in table 5.6, joint service contracts has a weak positive effect on firm financial performance ( $\beta = 0.286, t = 3.309, P > 0.001$ ), Equity alliances has a weak positive effect on firm financial performance ( $\beta = 0.361, t = 3.966, P > 0.000$ ), None equity alliances has a weak positive effect on firm financial performance. ( $\beta = -0.117, t = -1.388, P > 0.168$ ). The relationships derived are statistically significant.

The regression equation derived was thus as follows:

$$Y_{1a} = 0.286JSC + 0.361EA - 0.117NEA$$

Where:

Y<sub>1a</sub>= Financial performance  
JSC=Joint services and cooperation  
EA=Equity alliances  
NEA= Non-equity alliances

Using standardized coefficients, the regression model suggests that financial performance index is constant at 9.549 and a unit increase in Joint service contracts increases financial performance by 0.286 units, a unit increase in Equity alliances increases financial performance by 0.361 units and a unit increase in non-equity alliances increases financial performance by 0.117 units.

The findings therefore confirms sub hypothesis (1a) that strategic alliances have a significant statistical effect on the financial performance of Kenyan manufacturing firms in the East African Community market. H<sub>1a</sub> is therefore supported.

The second sub hypothesis tested through stepwise regression analysis is:

*H<sub>1b</sub>: Strategic alliances have a significant statistical effect on the non-financial performance of Kenyan manufacturing firms in the East African Community market.*

Table 5.7: Model Goodness of Fit of Strategic Alliance Attributes and Non-Financial Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.240a	.058	.035	1.61100

a. Predictors: (Constant), Non-Equity Alliances, Joint services and cooperation, Equity Alliances

As presented in table 5.7 above, 3.5% (Adjusted R<sup>2</sup> = 0.035) variations in non-financial performance is explained by variations in the strategic alliances namely; Joint service contracts, equity alliances and non-equity alliances.

Table 5.8: Model Overall Significance of Strategic Alliance Attributes and Non-Financial Performance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	20.110	3	6.703	2.583	.056b
1 Residual	329.607	127	2.595		
<b>Total</b>	<b>349.717</b>	<b>130</b>			

a. Dependent Variable: LnNon-Financial Performance (final Index)

b. Predictors: (Constant), Non-Equity Alliances, Joint services and cooperation, Equity Alliances

Table 5.8 shows that the model is statistically significant in explaining the relationship between the strategic alliance attributes and non-financial performance, F (3,130) =2.583, P<0.056.

As presented in table 5.9, Joint service contracts has a weak positive effect on non-financial performance which is not statistically significant ( $\beta=0.163$ ,  $t=1.660$ ,  $P>0.099$ ), Equity alliances has a positive effect on non-financial performance which is not statistically

significant ( $\beta=0.143$ ,  $t= 1.386$ ,  $P>0.168$ ), None equity alliances has a negative effect on non-financial performance which is statistically significant ( $\beta= -0.108$ ,  $t=3.556$ ,  $P<0.259$ ).

Table 5.9: Regression Coefficients for Strategic Alliance Attributes and Non-Financial Performance Model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	6.711	1.603		4.186	.000
Joint services and cooperation	.575	.346	.163	1.660	.099
Equity Alliances	.562	.406	.143	1.386	.168
Non-Equity Alliances	-.492	.434	-.108	-1.135	.259

a. Dependent Variable: LnNon-Financial Performance (final Index)

The regression equation derived was thus as follows;

$$Y_{1b} = 0.163JSC + 0.143EA - 0.108NEA$$

Where:

$Y_{1b}$  = Non-financial performance

JSC=Joint services and cooperation

EA=Equity alliances

NEA= Non-equity alliances

The regression model suggests that firm performance index is constant at 6.711 and a unit increase in Joint service contracts increases firm non-financial performance by 0.163 units, a unit increase in Equity alliances increases firm non-financial performance by 0.143 units and a unit increase in none equity alliances increases firm non-financial performance by 0.335 units. The findings therefore confirms sub hypothesis (1b) that strategic alliances have a weak positive statistical effect on the non-financial performance of Kenyan manufacturing firms in the East African Community market.  $H_{1b}$  is therefore supported.

The findings imply that strategic alliances are a good predictor of financial performance but relatively poor predictors of non-financial performance among Kenyan manufacturing firms in the EAC market. This may be because most EAC partner states are encouraging direct foreign direct investments in their respective countries as opposed to strategic alliances that are controlled from their countries of origin. Also mistrust among partner states may also be playing a key role in discouraging strategic alliances where most partner states are economically competing amongst themselves as opposed to complementing one another. The findings of statistically significant relationships between strategic alliances and firm performance are thus lead to acceptance of sub hypothesis ( $H_1$ ).

### Discussion of the Findings

The following section discusses the results of this study in line with the research objectives and the hypotheses formulated. The results from the test of hypotheses are compared with the findings of previous studies. These were formulated based on existing literature, both conceptual and empirical, and led to the development of conceptual model, which outlined the relationships between the variables. The objective of the study aimed at establishing the influence of strategic alliances on performance of Kenyan manufacturing firms in the EAC market. This objective had a corresponding sub hypothesis,  $H_1$ , which stated that strategic alliances have significant influence on the performance of Kenyan

manufacturing firms in the EAC market. Both the effect of strategic alliances on financial and non-financial performances were tested through sub hypotheses  $H_{1a}$  and  $H_{1b}$  respectively.

In testing the overall hypothesis of the strategic alliances and performance, the results showed that strategic alliances have a significant statistical effect on the performance of Kenyan manufacturing firms in the East African Community market. These results are in consistent earlier conceptual and empirical evidence by Chesang, (2012), (Douma, Bilderbeek, Idenburg and Looise, (2000) which had suggested that strategic alliances strengthens and enhances overall firm performance. For instance, Chesang (2012) studied merger restructuring and financial performance among commercial banks in Kenya and concluded that restructuring merger is very important in enhancing the overall organizational performance especially for those firms considered weak and ailing and also narrower business opportunities. Further Douma, Bilderbeek, Idenburg and Looise (2000) concluded that key resource sharing is important in enhanced performance.

The results for sub hypothesis (1a &b) confirms that strategic alliances have a significant statistical effect on the financial performance and non-financial performance of Kenyan manufacturing firms in the East African Community market. This implies that strategic alliances of manufacturing firms determine to some extent their financial performance and non-financial performance. Therefore, strategic alliances serve as a possible window of opportunities to be exploited and provide the means to neutralize threats (De Man, Duysters & Vasudevan, 2001). The potential of strategic alliances strategy is enormous and if implemented correctly, it can dramatically improve an organization's operations and competitiveness (Aun, 2014). On the specific strategic alliances, Equity alliances are established to be statistically significant in explaining the performance of the manufacturing firms in EAC.

Strategic alliances and performance relate significantly, as it play a critical role in fostering performance. It was established that strategic alliances constructs independently but positively plays a role of fostering performance through joint services and cooperation, equity alliances and non-equity alliances. The findings therefore is a reflection that for Kenyan manufacturing firms in the EAC to continuously improve on performance, their respective strategic alliances are to be evaluated and realigned to their key objectives. This is in line with the results that strategic alliances play a positive role in fostering performance of Kenyan manufacturing firms in the EAC market.

## Summary and conclusions

### Summary of findings

The objective of the study was to establish the influence of strategic alliances on the performance of Kenyan manufacturing firms in the EAC market. Strategic alliances in this case essentially involve coordination of two or more partners to pursue shared objectives and satisfactory cooperation are vital to their success. This study established the strategic alliances as joint ventures, equity strategic alliances and non-equity strategic alliances.

Table 6.1: Summary of Hypothesis Testing and Decision on Influence of Strategic Alliances on the performance

Objective	Hypothesis/ Sub hypotheses	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Decision
To establish the effect of strategic alliances on	$H_{A1}$ : Strategic alliances have a significant statistical effect on the performance of Kenyan manufacturing firms in the East	.738a	.545	.534	Accept

Objective	Hypothesis/ Sub hypotheses	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Decision
the performance of Kenyan manufacturing firms in the East African Community market;	African Community market.				
	<i>Sub hypotheses:</i> <b>H<sub>1a</sub></b> : Strategic alliances have a significant statistical effect on the financial performance of Kenyan manufacturing firms in the East African Community market	.518a	.268	.251	Accept
	<b>H<sub>1b</sub></b> : Strategic alliances have a significant statistical effect on the non-financial performance of Kenyan manufacturing firms in the East African Community market.	.240a	.058	.035	Accept

The average mean score of the statements depicting the manifestations of joint services and co-operations among the surveyed firms is 3.420. This implies that joint services and co-operations manifests strongly among Kenyan manufacturing firms in the EAC market.

The statement that manifested highly was that the Kenyan manufacturing firms enter into strategic alliances through joint services and co-operations largely because of access to knowledge and expertise, the results further revealed that to a moderate extent, joint services and cooperation was based on changes in consumer tastes, demands and lifestyle. Similarly, the element of joint services and cooperation tend to reduce installation costs to a moderate extent.

Nevertheless, while it's clear that idea of joint services and cooperation enables firms to gain information, knowledge and expertise as is also the parameter on enhancing functioning and operations of firms' products it is important to note that those aspects did not have much influence and were not statistically significant. The study further revealed that the responses varied at low level with coefficient of variation implying that the manifestation of joint services and cooperation was on equal level across the firms surveyed.

The average mean score for the statements of how equity alliances manifests among the Kenyan manufacturing firms in the EAC market is 3.60. The statement with the highest mean was that the aspect of political and regimes have influence on equity relationships across borders. Other statements were that equity alliances make it easier for firms to do businesses, equity alliances keep firms' relationships closer, and equity alliances enhance management controls and equity alliances strengthening financial links. However, the aspects of equity alliances helping businesses to save time and that of equity alliances motivating performance had the lowest mean respectively. Further the statement that equity alliances enhance management controls had the highest coefficient of variation implying that there was low variation of responses on the statement. Effect of equity alliances on performance was however established to be statistically significant.

The average mean score of the statements depicting non-equity alliances among the surveyed firms was 3.560. This is a relatively high mean depicting high manifestation of non-equity alliances across the firms. The findings suggest that equity alliances work well in performance of Kenyan manufacturing companies through market enhancement of

information and technology. The aspect of product licensing creating products accessibility to broader markets had the highest manifestation. This was followed by non-equity alliances based on enhancing business performance. Further, the study found out that financial regulatory regimes affected franchising relationship to a moderate extent. The study further established that the statement that showed high variation among responses was that equity alliances enhance business performance and that financial regulatory regimes affect franchising relationship. This depicts that equity alliances are common among the Kenyan manufacturing firms in the EAC market.

### **Conclusions**

The research on the influence of strategic alliances on performance of Kenyan manufacturing firms in the EAC market was confirmed. However, the relationship was weak. It was established that the influence of strategic alliances on performance of Kenyan manufacturing firms in the EAC market was positive and statistically significant. The study also reported statistically significant independent effects of the strategic alliances dimensions on indicators of performance. The results therefore support the strategic alliances concept and the anchoring theory. The resource dependency view support alliances as no firm has all the necessary resources in order to be self-sufficient and survive in a competitive environment.

### **Contributions to Knowledge**

The findings of this study demonstrate that the approach on the variables is important in a developing country and that it helps in identifying theories unique to Kenyan manufacturing firms in the EAC market and increase the strategic alliances validity of theories developed in industrialized countries. The study has demonstrated that Kenyan manufacturing firms in the EAC market do operate in competitive environments and their performance is subject to strategic alliances, regional integration and macro environment aspects as postulated in the various paradigms.

The dimensions of regional integration and firm performance as used in this study also supports the transaction cost theory that the study findings indicated the moderating effect of regional integration on the relationship between strategic alliances and firm performance. This study sought to establish this relationship and how other variables influence its performance as a strategic management concept. Other empirical research studies have proposed that strategic alliance has a positive relationship with firm performance. These study findings confirmed and support the proposition of a statistically significant effect.

### **Suggestions for Further Research**

Despite using multivariate analysis to test this study's propositions, perhaps future studies could use different statistical techniques (e.g. path analysis, structural equation modeling - SEM) that can provide better insights and understanding of the relationships among the core factors in the study. In addition, future studies should consider utilizing multiple methodologies (i.e. quantitative and qualitative) to help identify the key factors behind firms' commitment to the internet. The aim behind using different statistical techniques and /or plural methodologies is to validate and further strengthen the existing research findings.

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