

# Moderating Effect of Alliance Network on the Relationship between Competitive Strategies and Firm Performance in the Telecommunication Industry in Kenya

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## Abstract

*Organizations on telecommunication platforms are heavily impacted by increased competition globally due to the industry's dynamic nature especially in technology. Therefore, this has resulted in formation of alliance networks with the aim of entering new markets, developing new products faster, and meeting the growing market demands. Alliance networks enable firms respond to technological changes with greater efficiency and speed in order to remain relevant to the market scene. Hence, the current investigated moderating effect of alliance networks on the relationship between competitive strategy and firm performance in telecommunication industry in Kenya. The descriptive research design was adopted and primary data collected through issue of questionnaires. Study findings revealed positive moderating effect of alliance networks on the relationship between competitive strategy and firm performance in the telecommunication industry in Kenya*

**Keywords:** Alliance networks, Firm Performance, Competitive Strategy, Telecommunication

## 1. Introduction

Organizations on the telecommunication platform are heavily impacted by increased competition globally due to the industry's dynamic nature especially in technology (CA, 2016). Therefore, this has resulted in formation of alliance networks with the aim of entering new markets, developing new products faster, and meeting the growing market demands. Alliance networks enable firms respond to technological changes with greater efficiency and speed in order to remain relevant on the market scene (Sompong, Igel & Helen, 2014). Indeed, such interdependence does not only create resource sharing especially first-hand market information, technologies and innovation but also eliminating opportunistic tendencies where firms take advantage of others (Sathana, Velnampy & Rajumesh, 2018).

Notably, Kenyan mobile companies have embraced network alliances to some limited degree although the evidence of accrued benefits is unknown. Safaricom has been forming strategic alliances in order to maintain its strategic competitiveness in the industry; they entered into a mutual agreement with Commercial Bank of Africa (CBA) leading to the birth of M-PESA (CBA, 2016). In November 2012, the same mutual and trusting relationship between the two led to another birth, M-Shwari with the aim of revolutionizing products in the banking industry.

M-Shwari is a suite of banking products that are offered to M-PESA customers through their handsets with the aim of enhancing the MPESA value proposition. Basically, it allows customers to access deposit and loan products that are reliable, convenient, and cost-effective for making micro-savings and taking micro-loans (CBA, 2016). Through M-Shwari and M-PESA, both firms have benefited substantially. Safaricom was able to increase usage of M-PESA and revenue while CBA was able to increase the number of customer accounts from ninety-five thousand borrowers to 3.8 million borrowers (CA, 2016).

In 2014, Safaricom entered into a strategic alliance with Qatar Airways. The alliance launched a service that enables customers to purchase their Qatar Airways tickets using M-PESA. This new service was expected to offer greater flexibility for passengers as they can book their tickets online or through the reservations office and simply pay using M-PESA. Qatar Airways is an award-winning airline, while M-PESA commands more than one third of all mobile money transactions globally and has a subscriber base of more than 18.1 million individual customers (CA, 2016).

Other strategic alliances Safaricom has entered into include a partnership with the Government of Kenya for the provision of closed-circuit security cameras for the exchange of 4G spectrum; with Kenya Power for the

provision of electricity on credit, a product known as “OkooStima”; and also, strategic alliances with Kenya Airways (KQ) for the sale of tickets using Safaricom customer loyalty points fondly referred to as Bonga Points (CA, 2016).

Airtel Kenya has also entered into strategic alliances with other firms. For example, In partnership with Chase Bank as well as Visa, Airtel subscribers with accounts in the two entities, could access cash from their accounts. Airtel Kenya in partnership with Samsung Inc. and Apple Inc., allowed Airtel customers to buy handsets from the latter’s shops throughout Kenya (KNBS, 2017). So far little information on the alliance networks adopted by the other firms has been provided. For instance, Essar’s YU, had to be rescued by Safaricom and Airtel through acquisition.

Kenyan telecommunication firms engaged in strategic alliances through partnership with banks, airlines, internet providers, mobile handset makers and health insurance firms. Their aim was to gain a competitive advantage in the market, grow their subscriber base, improve revenue and strengthen their brand identity. However, besides these efforts, there is little benefit to show with regard to performance as evidenced by profit levels and market shares over time thus performance issue remains wanting. This calls for empirical inquiry in the telecommunication industry.

### **Statement of the Problem**

Firms that execute superior competitive strategies and engage in appropriate alliance networks gain a competitive advantage over their competitors in exploiting available opportunities which guarantees them higher profitability and bigger market share (Kotler, 2017). Although communication firms in Kenya pursue various competitive strategies, trends of certain performance indicators such as profitability, branch network, market share and subscribers, shows a fluctuating drift.

Typically, Safaricom’s profit dropped from 31.2% in 2013 to 18% in 2016, Airtel’s profit dropped from Ksh15.28 b 2015 to Ksh 8.18b in 2016. Essar (YU) dropped from 159.38% in 2014 to 25.87% in 2016, Telekom dropped from 42.57% to 10.4% as Sema and Finserve Africa (Finserve Africa (Equitel) among others, posted mixed outcomes. In terms of market share, Safaricom dropped from 76% from first quarter of 2017 to 71% by end of 2017. Airtel Kenya Ltd shares dropped from 17% in 2012 to 15% at end of 2017. Telekom dropped from 14% in 2016 to 9% in 2017 while Finserve Africa (Equitel)) dropped from 11% to 8% in 2014. The market share for Sema Mobile Services remained below 0.0 percent.

Apart from declining profitability and market share, there are also concerns of some telecoms such as Essar Telecom’s YU and Orange Kenya Limited closing business in Kenya. Additionally, the frequent rebranding by some firms is a concern as it might be a sign of poor performance. For instance, Airtel had traded under ‘Celltel’ and ‘Zain’ brands within a short time. A further concern is the proliferation of debts by some telecommunication firms such as Airtel’s current liabilities of 55.3 billion against assets of 9.7 billion. More so, the rescuing of Essar’s YU by Safaricom and Airtel through acquisition, poses more performance questions of this sector. Likewise, the recent decision by Telkom Kenya and Airtel Kenya to merge their mobile enterprise and carrier services to form a single joint venture company to be named Airtel-Telkom, points to the struggles telecommunication firms are experiencing.

Evidently, there is a trend of telecommunication firms adopting so many and conflicting marketing strategies with some abandoned mid-way before ascertaining their viability. Besides, firms replicated marketing strategies pursued by parent telecommunication firms in their countries that ended unsuitable to the Kenyan market environment. Further, some companies never did comprehensive feasibility surveys of suitable marketing strategies before adopting them.

Although telecommunication firms engaged in strategic alliances to gain a competitive advantage, most of the alliances were hurriedly done, benefitted other partners more and were inferior hence no benefits realized (Kyengo, Ombui & Iravo; 2016; Arasa & Gathanji, 2014; Muia, 2017). This explains the poor performance despite pursuing competitive strategies and alliance networks among most telecommunication firms in Kenya. Conspicuously, the above trends and concerns are possible evidence of underperforming telecommunication firms.

## 2. Theoretical Review and Empirical Review

### Resource Based Theory

First advanced by Barney in 1991 who links alliance networking to an organization's performance. This theory argues that the only way to access scarce resources as well as produce new ones is through alliance networks and that companies' competitiveness is predicated on how much resource each has. Basically, markets are characterized by inadequacy and deficient implying no single firm has adequate resources it requires hence the need for alliance to make up for such gap.

This theory was further developed by Chi (1994) who argued that pooling resources that match or correspond create resources that are distinctive that can only be done through alliance. These are valuable resources, developed during the alliance lifespan. Incidentally, owned individually, they do not give value addition to a firm not in alliance as they do to companies in partnership since rivalry firms cannot duplicate or imitate complemented resources. Indeed, this theory articulates the significance of complementary resources as trademark and hallmark of alliance networks.

To develop this theory further, Linwei et al. (2017) describe complementarily or balancing resources as an extent to which companies in alliance can make up for another company's resources as the degree in which firms can cover each other's deficiency or absence resources. Greater resource resemblance or likeness creates advantage of economies of scale among alliance partners besides gaining competitiveness, economies of possibility, combined effect and new resource development.

In the context of the current study, this theory posits that telecommunication firms in Kenya can enter into alliances to have a competitive advantage through maximizing resources from other firms as well as enjoy economies of scale in sharing transaction risks and expenses. Such resources can give these firms a cushion against business slumps among other reversals such as the ones experienced especially by Airtel and Telecom and ensure more even and predictable resource flows. The end results are improved profit margins that characterize intense and stiff competition by Safaricom in Kenya. Indeed, this gives alliance affiliates exit route during hard economic times as well as equip them with viable means to compete with top firms such as Safaricom that owns 77% of the market share in Kenya (KNBS, 2017).

The resource-based theory can enable telecommunication firms in Kenya to achieve business competitiveness through alliance networks by enabling access translation of resources and capabilities outside their jurisdiction. Therefore, this theory resonates well with this study in that it can assist telecommunication firms in maximizing resources to gain competitive advantage resulting in high performance.

Resource based view takes the view that valuable, hard to copy firm resources and capabilities provide key sources of competitive advantage (Hart, 1995). Such resources and capabilities include valuable and non-substitutable basic requirements for product delivery that are tacit, socially complex and rare — complemented by unique set of capabilities such as technology, product design, procurement processes, production capabilities, distribution channels and service delivery models. It is evident that Safaricom Kenya's limited competitive strategies align with the resource based view in that a great deal of investment has been done in infrastructural capabilities that are complex and difficult to replicate.

This is due to the fact that a complex set of requirements is needed to implement the level of complexity and scale that the company has done. These include investments in terrestrial and submarine fiber optic networks for data transmission, investment in radio frequency resources and expensive 4G licenses to enable the organization utilize the resource for broadband distribution and investment in best in class network quality monitoring systems.

The telecommunication companies have also invested in internal systems developed in-house to complement the vendor based systems for value added services. This has been a major advantage to the companies in the service delivery as it positions the organization ahead of its competition in the market. These firms are able to leverage their international partnerships to its advantage especially for a better negotiating ability that has influenced the procurement of its core resources to its advantage. Through partnerships such as the Vodafone

discounting agreement, these firms enjoy better discounts and contract services that may not be available to the competition which it uses to enhance their product offering.

Agile methodologies are used for product development which emphasizes adaptive planning, evolutionary development, early delivery, and continuous improvement while encouraging rapid and flexible response to change. Through this approach the go-to-market journey has been reduced significantly by allowing for the rollout of the minimum viable products and focusing on continuous improvement based on customer feedback on the products. This not only reduces cost to market but also increased customization ability of the products based on customer feedback.

These companies have also invested in an elaborate distribution network that makes it possible for customers to access the companies' products as easily as possible. This is a resource strength whereby as competition struggles to keep visibility and access to their services beyond the headquarters, these telecommunication firms are readily accessible and therefore top of mind when customers are looking for internet service providers. Unlike other telecommunication firms, Safaricom Kenya limited is well endowed with young, extremely competent and aggressive human resources.

According to this theory, companies and market places have become systems that organize and harmonize commercial dealings. Further, it posits that firms grow when trading expenses become higher than in-house ones, implying internal costs of trading externally especially bureaucracy, bring more losses hence affecting performance. In essence, the theory gives rationale for a firm's existence, expansion and outsourcing of particular functions. According to this theory, businesses strive to cut down on expenses by swapping resources with other companies as well as internal red-tape expenses. To this theory, companies and market places have become systems that organize and harmonize commercial dealings.

Further, it posits that firms grow when trading expenses become higher than in-house ones, implying internal costs of trading externally especially bureaucracy, bring more losses hence affecting performance. This theory was developed further by Tobin (1956), who argued that indeed, a business could grow as long as internal expenses are lower than outsourced ones. Tobin continues to opine that worrying expenses involving deals or transactions occur when a product or service is transported to a different place for additional or new technological crossing points.

Besides, more costs come about from sharing of resources influenced by changing market conditions, unscrupulousness, risks, constrained levelheadedness as well as key firm resources. Consequently, inter-organization trading costs therefore sky-rocket, implying, it is shrewd to avoid outsourcing by confining to internal transactions if a company realizes the above-market factors are in play.

This theory is relevant to the current study because it cautions managers to compare in-house transaction expenses to outdoor costs before deciding to transact within or without. The environment consists of other organizations that exert various forces of an economic, political, or social nature and provides key resources that sustain the organization and lead to change and survival. The open system postulates that organizations interact with their surrounding environment in terms of inputs and outputs and constantly adapt to the changes in the environment in which they exist.

Safaricom Kenya limited is constantly reviewing the external environment both at local and international view levels with the aim of staying abreast of the technological advancements and market dynamics that may impact its business especially in the internet market products. Though the market research function the organization receives up to date reports on competitive products and their changes allowing it to adjust or reshape the products to remain competitive in the industry. Feedback on the impact of promotions and offers to the existing customer experience is monitored to ensure that the experience is not degraded in an attempt to bring onboard more customers. The feedback is monitored from different customer touchpoints like the customer support center, retail shops and the social media platforms and is acted upon fast.

Critics of this theory assert that RBV is more applicable to leading firms with resources of a high order to shape the strategy and does not favor average upcoming businesses. The reason being that start-ups or struggling companies are not endowed with adequate resources to remain competitive; hence, this theory cannot be fully applicable to such firms. Moreover, in the event that resources are replicated by rivalries, such companies will

no longer maintain their competitiveness. The resource-based view gives managerial implications or operational validity. Further, this theory fails to give an elaborate methodology on how managers can develop resources that are unique, replication proof and not substituted.

### Empirical Review

An empirical study was carried out by Qian and Wang, (2017) to establish the role of alliances on new market entry. With a research tool of survey-based website, 5 alliance partner firms' managers from Denmark involved in joint ventures and those not practicing joint ventures were interviewed. The findings of the study revealed that firms involved in joint ventures had higher and quick chances of entry into new markets than those who never practiced this type of alliance. The study established that firms with joint ventures provide faster and more entry chances into new markets. Indeed, the findings depict a strong correlation between firms active in alliance activities and new markets entry success. Besides, the study findings indicate proper prior formation of alliance networks, robust relations, confidence and security, impact firm performance significantly. Apparently, these findings may lack some reliability because the population has higher sample size.

Sklavounos, Rotsios and Hajidimitriou, (2015) did a study on the maximization of partnerships as a means to entry into an external market into New Zealand. Comprehensive and detailed open-ended questionnaires were administered on 6 business development managers of 6 five-star hotels to collect primary data. The research findings indicate that only big companies with massive investment portfolios are accorded friendly entry terms into a foreign country. However, qualitative technique is not appropriate in this study as it cannot effectively determine performance that can best be determined via quantitative means.

Madhok, Keyhani and Bossink, (2015) also supported this finding when they assert that companies join partnerships majorly to enhance company outlook and status, to attract collaboration partners, have soundness, attract prospective investors and get government endorsement. However, the qualitative technique is not appropriate in this study as it cannot effectively determine performance that can best be determined via quantitative means.

Varma, Awasthy, Narain and Nayyar, (2015) conducted a quantitative study with a 5-point Likert scale on impact of alliance network size and firm performance on departmental heads in 2 MNL in Japan. They found out that economies become more globalized, knowledge-based, knowledge creation and learning, increasingly becoming more suitable to enter into new markets. Factor analysis was used to consolidate the parameters and form a single index. Firm performance was operationalized in terms ROA, operations cash flow, client satisfaction level, expansion of market shares and quality of products. The study used a Likert scale of 5 points to determine effect of the above variables on company performance, participants were required rate each of the variables in relation to performance. In the end, findings established a strong correlation between size of partnerships and organizational performance.

Conversely, the reduced size of the sampled population undermines the study reliability as it might not be a representative since alliances having more firms can give better outcomes of the impact of alliances. However, on the qualitative data, Coccia, (2017) found contrary results that alliance network does not give a firm competitive advantage to access a new market where alliance members are not equal in terms of resources, hence alliance network work in favour of big alliance members.

Manchanda, Grant and Adithya (2014) conducted a study in Indonesia among 10 start-up firms in SMEs. Collecting primary data on a sample size of 67 managers or business owners through open and closed questionnaires, the study investigated the impact of alliance networks on entry into new market. Market entry was operationalized as increased distribution channels, supplier relationships, bypassing entry barriers and satisfying market preferences. Regression analysis was used to analyze primary data collected from 20 managers on a closed-ended questionnaire.

The findings indicated a strong and affirmative correlation between entering external markets and alliance networks. Likewise, this study is in tandem with view of Varma et al., (2015) who suggested that alliance networks give a firm competitive advantage in accessing new markets. However, the short period the sampled start-ups had been in operation is short to determine their successful entry into new markets.

Kumar, Ram, Rishika, Ramkumar and Kannan (2016) used simple random sampling technique to select 100 managers of 10 seed company agents in Chile to determine the influence of technical (innovative) and commercial capital on entry into new markets. They are using 5-Likert scale questionnaire on 100 managers sampled and data descriptively analyzed. Principals companies were attractively well-thought-out to enter a new market, especially if had an innovative high notch of and stable business capital. The study recommended firms to embrace alliances to access new markets.

However, the results of this study are in contrast to findings of a study by Mazer and Rowan (2016), who established that firms with inferior expertise struggle to enter new markets especially foreign ones. Before the study is considered for adoption by relevant stakeholders, targeted population; overall managers were most likely not in pole position or suited to respond to strategic marketing issues as marketing managers could.

Humphreys and Jen-Hui Wan (2017) examined the empirical evidence between tapping external resources and organization performance among Jordanian manufacturing firms. The study collected primary data using a closed-ended questionnaire from marketing managers, business development managers, strategic managers. Factor analysis was used to consolidate the parameters and form a single index. Firm performance was operationalized as ROE, sales, market share and quality of the product as well as capital, all of which were measured using a five-point Likert scale whereby the respondents were requested to indicate the effect of each in relation to performance. The findings revealed that there was a strong correlation between tapping into alliance network resources and organizational performance. Besides, based on resource view, the study implied that gained competitiveness to the ability to access certain resources particularly tacit based knowledge.

This view that is based on resource capability rejects an assertion that resources are perfectly mobile and homogeneous. Indeed, this resource-based approach that drives firms into alliance than other conditionality is an old practice conventionally applicable the world over. Further, the study found out that organizations outsmart their competition by using their existing internal resources to sustain competitive advantage by way of taking advantage of the market opportunities and neutralizing threats they face from the same competitors. Still, the study established that firms could only take advantage of the available opportunities if they have adequate resources. However, the study targeted population that is irrelevant in relation to alliance networks; business development managers might give views different from marketing managers and strategic managers hence compromise findings of the study.

Ciobota and Velea (2015) surveyed the impact of domain knowledge and firm performance in Tehran. Using data set extracted from annual statements of companies quoted in Tehran Securities Exchange and applying ordinary least squares (OLS) the relationship was experimentally tested. The findings established that insider knowledge had a direct influence on organization performance especially when measured by return on assets (ROA). This finding is confirmed by Bagnoli and Giachetti's (2015) study that revealed companies with superior diversification as well as specialization recorded higher outcomes than those with lower features above. Two scholars opine further that firms that never shared important information fully, experienced lower performance. It was also established that relying on annual statements of companies only provides information on performance but cannot furnish data on alliance networks in terms of knowledge domain since it is never factored in financial statements.

However, Andersson and Klepper (2013) applying a semi-structured questionnaire on 10 marketing managers of 10 5-star hotels in Bolivia, regressed data revealed that, although alliance network capabilities ease sharing of resources, ideas and information, there was no level playing ground that was inclusive. They further argue that although augmented or amplified contribution by alliance members generates economies of scale advantage, it does not enable individual partners to reap commensurate returns. However, his findings concurred with that of Vonortas and Zirulia (2015) that asserts that increased sharing of information diminishes chances of products not performing better that has adverse repercussions to organization performance.

While surveying banks in Canada with the use of interview schedules on ten marketing managers from 10 banks and data analyzed using content analysis, Chang, Fernando and Tripathy, (2015) discovered that alliances improve the technological know-how in product development more than individual companies operating alone. The study also concluded that that technological knowledge represents the level of innovativeness and

competitiveness of the company. The study recommended that firms should rotate technical expertise across company boundaries so that the 'tacit' alliance wisdom of these veterans is shared to reduce both development costs and development time, improve the operational efficiencies and create capabilities.

This finding is in agreement with the views of Linwei, Feifei, Yunlong and Nengqian (2017) that alliances avail synergies for easy compliance with legislations established. Researching on private hospitals might not be the opportune target market since there is little new market seeking activity among hospitals as it happens in other sectors and hence findings of this study might not be reliable.

Wanjiru (2016) using descriptive design, 5-Likert point scale closed ended questionnaire on 40 middle and upper-level management staff on relationship between alliance networks and competitiveness. Regression analyzed data established that Safaricom Ltd failed to attain competitive positioning through the various strategic alliances due to poor strategy and top management lack of commitment. Generally, the review above is characterized by inconsistencies and contradictories in terms of findings by different scholars. This is attributed to different methods employed in the studies particularly qualitative and quantitative, small sample sizes, and administration of instruments being too formal and legal among other factors. Despite the inconsistencies and contradictories above, the review in this variable of entry into new markets explains underperforming of telecommunication firms in Kenya due to failure to maximize external resources through alliance networks. It therefore prudent for telecommunication firms in Kenya to embrace alliance networks in order to access resources such as entry into new markets.

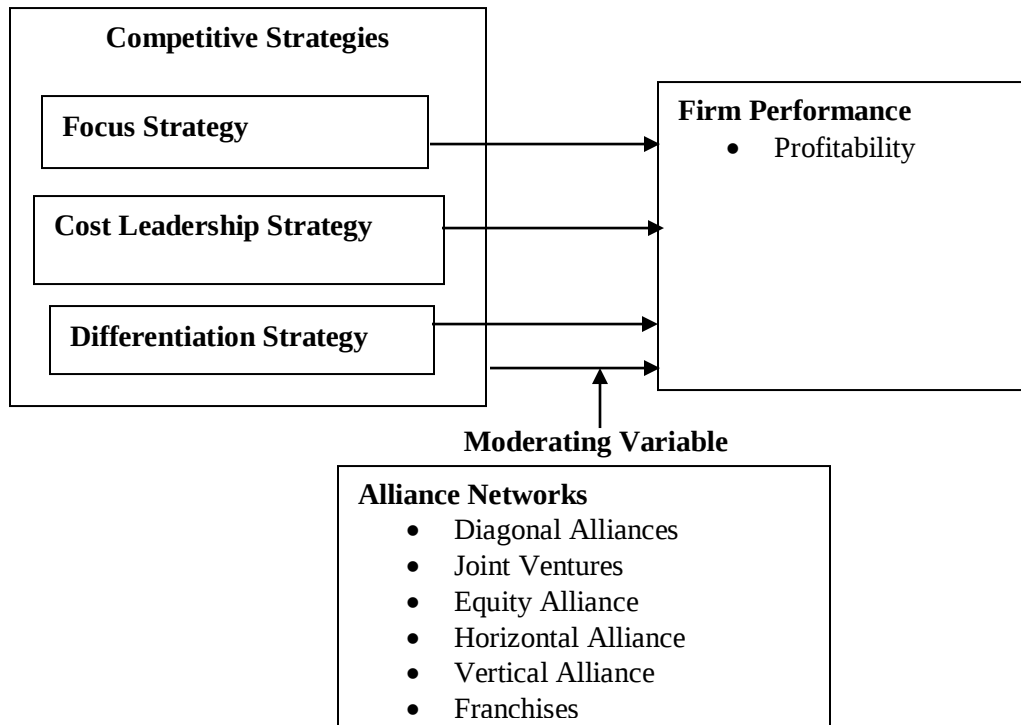
Vonortas and Zirulia (2015) in a quantitative study using 5-Likert point scale closed-ended questionnaire on procurement managers of 5 supply chain stores in Jakarta on the influence of external resources and information on competitiveness of the firms. Obtained data were analyzed using regression technique of the SPSS version 20. Proper procedures and methods scrutinize, construe, and create meaning of newly gained information make sense of new information, enables firms maximize resources fully. Secondly, having competences of combining gained resources with in-house resources, they can generate innovative products to gain advantage competitively. However, targeting and sampling procurement managers might not have been suitable to provide required marketing strategic information. For instance, over time, the inter-firm co-operation leads to the firms being less customer-oriented which leads to a situation whereby customers become dissatisfied with the level of services given and will usually opt for alternatives, a scenario some alliance members want to avoid. Focus Group Discussion as the sole data collection tool, might not have given statistical information on performance.

Overall, the picture of the role of knowledge as a key resource for enhancing competitive advantage gives mixed and inconsistent results by the mixed methods. The analysis is complicated by the variation in ideas about what is considered an effective knowledge maximization and knowledge exploitation, thus the same knowledge, while working for the advantage of the other, it disadvantages the other. Such differences need to be taken into better account for research that compares knowledge as a resource and competitive advantage.

### **Conceptual Framework**

A conceptual framework is a basic structure that consists of certain abstract blocks that represent the observational, the experiential and the analytical/synthetically aspects of a process or system is conceived. The interconnection of these blocks completes the framework for certain expected outcomes. A framework is a research tool intended to develop awareness and understanding of the situation under scrutiny and to communicate this. This framework is used in research to outline possible courses of action or to present a preferred approach to an idea or thought.

Successful organizations constantly strive to improve all aspects of management such as marketing. In the highly competitive business environment, only the innovative, trendy and efficient prevail. Therefore, for competitive advantage, there is need for better functional marketing relationships such as alliance networking for continued competitiveness. In this regard, this framework is a hybrid of models of studies by Hirai, Watanabe and Inuzuka, (2015); and Rowan, (2016)

**Independent Variables****Dependent Variable****Figure 2.1: Conceptual Framework****3. Research Methodology****Research Design**

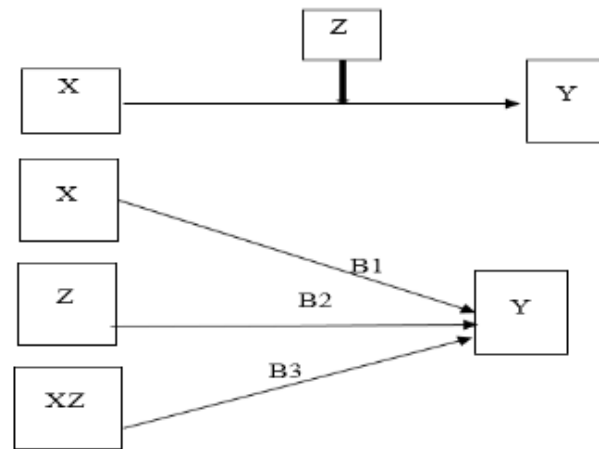
In order to obtain the best outputs, this study utilized descriptive survey research design. The research design presents data into a meaningful form. It also shows the current status of the subject of study. This eventually helps the researcher to understand the characteristics of the subject phenomena of interest in the current situation. It is systematic in nature hence it allows efficiency in gathering relevant information in the subject of study. It also offers ideas for further research and helps in making simple decisions from the research findings.

**Empirical Model**

The study was based on three mathematical models. The first model (model 3.1) followed the work of Trujillo and Long (2018). It was meant to test the influence of the three competitive strategies (focus strategy, cost leadership strategy and differentiation strategy) on firm performance. The models were specified as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \dots \dots \dots \text{(Model 3.1)}$$

The second model (model 3.2) was used to test the moderating effect of an alliance network on the relationship between competitive strategy and firm performance. To effectively achieve objective four, model 3.2 was used to test hypothesis four ( $H_{O4}$ : Alliance networks have no significant moderating effect on the relationship between competitive strategy and firm performance in the telecommunication industry in Kenya) of the study. Moderation effects were tested with multiple regression analysis, where all predictor variables and their interaction term were centered prior to model estimation to improve interpretation of regression coefficients. A path diagram developed by Leung (2015) and advanced by Marshall & Rossman (2015) was adopted.



X is the independent variables (Competitive strategies)

Y is the dependent variable (Firm performance)

Z is the moderator variable (Alliance networks)

XZ is the product of X and the moderator variable Z (a combination of competitive strategies and alliance networks)

A multiple linear regression equation formed the basic moderation model as shown in model 3.2,

$$Y = \beta_0 + \beta_y CS + \beta_z AN + \beta_p CS * AN + \epsilon \dots \dots \dots \text{( model 3.2)}$$

Where;

$\beta_y$ ,  $\beta_z$  and  $\beta_p$  are the coefficients to be estimated

$\beta_y$  ranges between  $\beta_1$  to  $\beta_3$

$\beta_z$  ranges between  $\beta_4$  to  $\beta_9$

$\beta_p$  ranges between  $\beta_{10}$  to  $\beta_{27}$

$\epsilon$  is the residual in the equation

Y-Firm performance

CS-Competitive strategies which have three dimensions, that is, the focus strategy, cost leadership strategy, differentiation strategy

AN –Alliance networks which have six dimensions, that is, diagonal alliances, joint ventures, equity alliances, horizontal alliances, vertical alliances and franchises

CS\*AN-combination of competitive strategies and alliance networks

If the interaction between CS and AN was not statistically significant (equal to zero), then AN was not a moderator variable. If statistically significant (different from zero), then AN was a moderator variable and thus moderation was supported.

The stepwise regression technique consisting of three models derived from model 3.2 was used to test the moderating effect of Alliance networks on the relationship between competitive strategy and firm performance in the telecommunication industry in Kenya. The three steps followed are as discussed.

### **Step one: Effect of competitive strategies on firm performance in the telecommunication industry in Kenya.**

First, to test the effect of the competitive strategies (Focus Strategy, Cost Leadership Strategy and Differentiation Strategy) on firm performance in the telecommunication industry in Kenya Model 3.1 was adopted as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \dots \dots \dots \text{( Model 3.1)}$$

Where:

Y= Firm performance in the telecommunication industry in Kenya

$X_1$  = Focus strategy (FS)

$X_2$  = Cost Leadership strategy (CLS)

$X_3$  = Differentiation strategy (DS)

$\varepsilon$ =Error Term

### **Step Two: Effect of alliance networks on the relationship between competitive strategy and firm performance in the telecommunication industry in Kenya.**

Secondly, to test the effect of alliance networks on the relationship between competitive strategy and firm performance in the telecommunication industry in Kenya model 3.2 was adopted as follows:

The alliance networks were introduced to model 3.1 and the equation utilised was as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 AN_1 + \beta_5 AN_2 + \beta_6 AN_3 + \beta_7 AN_4 + \beta_8 AN_5 + \beta_9 AN_6 + \varepsilon \dots$$

..... (Model 3.2)

Y= Firm performance in the telecommunication industry in Kenya

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$  and  $\beta_9$  are the coefficients to be estimated

$X_1$  = Focus strategy (FS)

$X_2$  = Cost Leadership strategy (CLS)

$X_3$  = Differentiation strategy (DS)

$AN_1$  = Diagonal alliances

$AN_2$  = Joint Ventures

$AN_3$  = Equity Alliances

$AN_4$  = Horizontal Alliances

$AN_5$  = Vertical Alliances

$AN_6$  = Franchises

$\varepsilon$ =Error Term

### **Target Population**

A population consists of a group that shares common characteristics from which individuals or units of analysis are then chosen out of the population for the study. Galvan (2015), states that a population refers to all the elements under consideration for a particular study and a population could be finite or infinite. The target population also is known as the theoretical population, has varying characteristics and it refers to the entire group of individuals or objects to which researchers are interested in generalizing the conclusions (Kihn & Ihantola, 2015).

The study surveyed and collected data from 66 Kenyan telecommunication firms registered by Communication Authority of Kenya (CA). Specifically, the accessible population comprised 12 international gateway operators, 24 network facilities providers tier 2 and 30 network facilities providers tier 3. As such, a total of 66 managers formed the targeted population. This industry had been chosen for study because firms were likely to exhibit elaborate alliance network philosophy, hyper-competition, strong cooperation activity, brief product lifetime, and regular product/services appraise (Milat, Bauman & Redman, 2015).

### **Research Instruments**

For the purpose of this research, a questionnaire was chosen to evaluate competitive strategies, alliance networks and firm performance in the telecommunication industry in Kenya. It was considered that a questionnaire was one of the most efficient ways to collect data as it can be administered to a large number of people simultaneously and makes analysis convenient due to uniformity of structure. The questions were formulated clearly so that all employees can understand them. In the present study, the rationale for applying the questionnaire as a research instrument was pegged on the fact that it will be cheaper and easier to apply a big number of respondents. Questionnaires were preferred since they are relatively cheaper and do not require as much effort from the questionnaire as verbal or telephone surveys. Further, the tool often has standardized answers that make it simple to compile and analyze data (Galvan, 2015).

### **Data Processing and Analysis**

Data analysis is the mathematical treatment of quantitative and/or qualitative data so as to obtain the desired statistical measurements and was guided by the objectives of the research. Data presentation on the other hand

refers to the conversion of data into summarized and easily understandable graphical forms (Krueger & Casey, 2015). Modes of data presentation include contingency and frequency tables, graphs, charts and plots. Inferential statistics that included regression analysis examined the nature of influence of focus strategy on firm performance in telecommunication industries in Kenya.

#### 4. Results and Discussion

##### Alliance Networks and Firm Performance

The main objective of the study sought to establish the moderating influence of alliance networks on the relationship between competitive strategies and firm performance in the telecommunication industry in Kenya. From the findings, 79% of the firms had entered into an alliance with other companies. With advancement in technology and globalization, information flow in every field such as competitive strategies are readily available and applied by almost all firms. As a result, competition is stiffer than before so to survive, companies must adopt new strategies. Alliance networks, as one of the game changers on the corporate platform, when combined with competitive strategies, superior synthesis to become a force in the market place. Complementing this finding was an empirical study carried out by Qian and Wang, (2017) to establish role of alliances on new market entry. With a research tool of survey-based website, alliance partner firms' managers from Denmark involved in joint ventures and those not practicing joint ventures were interviewed. The findings of the study revealed that firms involved in joint ventures had higher and quick chances of entry into new markets than those who never practiced this type of alliance. The study also established that firms with joint ventures provide faster and more entry chances into new markets. Likewise, this study is in tandem with view of Varma, Awasthy, Narain and Nayyar (2015) who suggested that alliance networks give a firm competitive advantage in accessing new markets. However, the short period the sampled start-ups had been in operation is short to determine their successful entry into new markets.

**H<sub>0</sub>:** *“Alliance networks have no significant moderating effect on the relationship between competitive strategy and firm performance in the telecommunication industry in Kenya”*

The objective examined the moderating effect of alliance networks on the influence of competitive strategy on firm performance in telecommunication industry in Kenya. The null hypothesis stated that: **H<sub>0</sub>:** Alliance networks have no significant moderating effect on the relationship between competitive strategy and firm performance in the telecommunication industry in Kenya. The models adopted explain the extent to which changes in dependent variable (firm performance) can be explained by the change in independent variable (competitive strategy) and moderator variable (alliance networks). Hierarchical multiple regression was adopted to evaluate moderating of alliance network. First, a model without a moderating variable model 3.1 was utilized to estimate the effect of competitive strategies on firm performance in the telecommunication industry in Kenya.

For the model without moderating variable

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \dots \dots \dots 3.1$$

The regression analysis results testing the influence of the competitive strategies (focus strategy, cost leadership strategy and differentiation strategy on firm performance for model 3.1 are presented in table 4.1.

**Table 4.1: Competitive Strategies and Firm Performance in the Telecommunication Industry in Kenya**

| Model Summary            |                             |                   |                            |        |      |
|--------------------------|-----------------------------|-------------------|----------------------------|--------|------|
| R                        | R Square                    | Adjusted R Square | Std. Error of the Estimate |        |      |
| 0.88                     | 0.77                        | 0.79              | 0.51                       |        |      |
| ANOVA                    |                             |                   |                            |        |      |
|                          | Sum of Squares              | Df                | Mean Square                | F      | Sig. |
| Regression               | 57.035                      | 3                 | 19.012                     | 74.011 | 0.00 |
| Residual                 | 14.642                      | 57                | 0.257                      |        |      |
| <b>Total</b>             | <b>71.677</b>               | <b>60</b>         |                            |        |      |
| Regression Coefficients  |                             |                   |                            |        |      |
|                          | Unstandardized Coefficients |                   | Standardized Coefficients  | t      | Sig. |
|                          | $\beta$                     | Std. Error        | Beta                       |        |      |
| (Constant)               | 0.003                       | 0.08              |                            | 0.04   | 0.97 |
| Focus Strategy           | 0.46                        | 0.11              | 0.42                       | 4.33   | 0.00 |
| Cost Leadership Strategy | 0.28                        | 0.1               | 0.27                       | 2.82   | 0.00 |
| Differentiation Strategy | 0.31                        | 0.13              | 0.29                       | 2.45   | 0.00 |

Regression results in Table 4.1 for model 3.1 depicted an R-value of 0.88; R squared (coefficient of determination) of 0.77 and a standard error of the estimate of 0.51. This indicates that 77% of changes on firm performance in telecommunication industries in Kenya can be accounted by focus strategy, cost leadership strategy and differentiation strategy jointly while the remaining percentage (23%) can be explained by other factors excluded in the model. The overall ANOVA results indicate that the model was significant at  $F = 74.011$ ,  $P = 0.000$ . The probability value of 0.000 indicates that the regression relationship was highly significant in predicting how competitive strategies influenced firm performance in the telecommunication industry in Kenya. To further analyse the results, the explanatory powers of competitive strategies on firm performance were discussed at 5% significance level. The constant value (0.003) implies that keeping all other factors constant (at zero), the firms' performance as a result of the independent variable (competitive strategies) will be 0.003. This t-values of  $t = 4.33$  p value  $< 0.00$  for focus strategy,  $t = 2.82$  p value  $< 0.00$  for cost leadership strategy and  $t = 2.45$  p value  $< 0.00$  for differentiation strategy further indicates that all parameters used contribute significantly in the function of the model. Model goodness of fit statistics revealed competitive strategies had significant influence on firm performance  $F(3, 57) = 74.011$ , p value  $< 0.05$ . Focus strategy had positive and significant influence on firm performance in telecommunication industries in Kenya ( $\beta = 0.46$ ,  $t = 4.33$ , p value  $< 0.05$ ). This implies that unit increase in focus strategy is associated with 0.46 units increase in firm performance in telecommunication industry in Kenya while holding constant cost leadership strategy and differentiation strategy. Cost leadership strategy had positive and significant influence on firm performance in telecommunication industries in Kenya ( $\beta = 0.28$ ,  $t = 2.82$ , p value  $< 0.05$ ). This implies that unit increase in cost leadership increases firm performance by 0.28 units while holding constant focus strategy and differentiation strategy. Differentiation strategy had positive and significant influence on firm performance in telecommunication industry in Kenya ( $\beta = 0.31$ ,  $t = 2.45$ , p value  $< 0.05$ ). This implies that unit increase in differentiation strategy increases firm performance by 0.31 units while holding constant focus strategy and cost leadership strategy.

Further, the study investigated the influence of competitive strategy, network alliance and firm performance of telecommunication companies in Kenya. Multiple regression analysis was adopted to identify whether the introduction of alliance networks (model 3.2) had a significant influence on firm performance. The results are presented in Table 4.2.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 AN_1 + \beta_5 AN_2 + \beta_6 AN_3 + \beta_7 AN_4 + \beta_8 AN_5 + \beta_9 AN_6 + \varepsilon \dots \dots \dots 3.2$$

**Table 4.2: Results for Competitive Strategy, Alliance Networks and Firm Performance in the Telecommunication Industries in Kenya**

| Model Summary           |                             |                   |                            |        |      |
|-------------------------|-----------------------------|-------------------|----------------------------|--------|------|
| R                       | R Square                    | Adjusted R Square | Std. Error of the Estimate |        |      |
| 0.9                     | 0.81                        | 0.77              | 0.52                       |        |      |
| ANOVA                   |                             |                   |                            |        |      |
|                         | Sum of Squares              | Df                | Mean Square                | F      | Sig. |
| Regression              | 57.787                      | 9                 | 6.421                      | 23.575 | 0.0  |
| Residual                | 13.89                       | 51                | 0.272                      |        |      |
| Total                   | 71.677                      | 60                |                            |        |      |
| Regression Coefficients |                             |                   |                            |        |      |
|                         | Unstandardized Coefficients |                   | Standardized Coefficients  | t      | Sig. |
|                         | $\beta$                     | Std. Error        | Beta                       |        |      |
| (Constant)              | 0.02                        | 0.17              |                            | 0.13   | 0.90 |
| FS                      | 0.47                        | 0.11              | 0.43                       | 4.22   | 0.00 |
| CLS                     | 0.27                        | 0.1               | 0.25                       | 2.54   | 0.00 |
| DS                      | 0.32                        | 0.14              | 0.3                        | 2.36   | 0.00 |
| AN <sub>1</sub>         | 0.11                        | 0.04              | 0.05                       | 2.78   | 0.00 |
| AN <sub>2</sub>         | 0.12                        | 0.03              | 0.05                       | 3.76   | 0.00 |
| AN <sub>3</sub>         | 0.05                        | 0.02              | 0.02                       | 2.34   | 0.00 |
| AN <sub>4</sub>         | 0.06                        | 0.03              | 0.03                       | 2.39   | 0.00 |
| AN <sub>5</sub>         | 0.1                         | 0.04              | 0.05                       | 2.7    | 0.0  |
| AN <sub>6</sub>         | 0.11                        | 0.04              | 0.05                       | 2.75   | 0.0  |

Upon the introduction of alliance networks as shown in model 3.2 from model 3.1, the R squared increased from 77% (table 4.23), to 81% (table 4.2), this recorded an R squared change of 4%. The increase in R squared (4%) indicated that alliance networks had significant influence on firm performance. Moderated model had significant influence on firm performance in telecommunication industries in Kenya  $F(9, 51) = 23.52$ ,  $p$  value  $< 0.05$ . Table 4.2 shows that, diagonal alliances (AN<sub>1</sub>) had positive and significant moderating effect on firm performance in telecommunication industries in Kenya ( $\beta = 0.11$ ,  $t = 2.78$ ,  $p$  value  $< 0.05$ ). Joint ventures (AN<sub>2</sub>) had positive and significant moderating effect on firm performance in telecommunication industries in Kenya ( $\beta = 0.12$ ,  $t = 3.76$ ,  $p$  value  $< 0.05$ ). Equity alliances (AN<sub>3</sub>) had positive and significant moderating effect on firm performance in telecommunication industries in Kenya ( $\beta = 0.05$ ,  $t = 2.34$ ,  $p$  value  $< 0.05$ ). Horizontal alliances (AN<sub>4</sub>) had positive and significant moderating effect on firm performance in telecommunication industries in Kenya ( $\beta = 0.06$ ,  $t = 2.39$ ,  $p$  value  $< 0.05$ ). Vertical alliances (AN<sub>5</sub>) had positive and significant moderating effect on firm performance in telecommunication industries in Kenya ( $\beta = 0.10$ ,  $t = 2.70$ ,  $p$  value  $< 0.05$ ). Franchises (AN<sub>6</sub>) had positive and significant moderating effect on firm performance in telecommunication industries in Kenya ( $\beta = 0.11$ ,  $t = 2.75$ ,  $p$  value  $< 0.05$ ).

The regression results for model 3.3 which tested the influence of each alliance network on the various competitive strategies are presented in table 4.3. The model was as follows

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 AN_1 + \beta_5 AN_2 + \beta_6 AN_3 + \beta_7 AN_4 + \beta_8 AN_5 + \beta_9 AN_6 + \beta_{10} K_1 + \beta_{11} K_2 + \beta_{12} K_3 + \beta_{13} K_4 + \beta_{14} K_5 + \beta_{15} K_6 + \beta_{16} K_7 + \beta_{17} K_8 + \beta_{18} K_9 + \beta_{19} K_{10} + \beta_{20} K_{11} + \beta_{21} K_{12} + \beta_{22} K_{13} + \beta_{23} K_{14} + \beta_{24} K_{15} + \beta_{25} K_{16} + \beta_{26} K_{17} + \beta_{27} K_{18} + \varepsilon \dots \dots \dots 3.3$$

**Table 4.3: Results for each Alliance Network on the various Competitive Strategies and Firm Performance in the Telecommunication Industries in Kenya**

| Model Summary           |                             |                   |                            |       |       |
|-------------------------|-----------------------------|-------------------|----------------------------|-------|-------|
| R                       | R Square                    | Adjusted R Square | Std. Error of the Estimate |       |       |
| 0.95                    |                             | 0.89              | 0.8                        | 0.49  |       |
| ANOVA                   |                             |                   |                            |       |       |
|                         | Sum of Squares              | d.f               | Mean Square                | F     | Sig.  |
| Regression              | 64.007                      | 28                | 2.286                      | 9.537 | 0.00  |
| Residual                | 7.67                        | 32                | 0.24                       |       |       |
| <b>Total</b>            | <b>71.677</b>               | <b>60</b>         |                            |       |       |
| Regression Coefficients |                             |                   |                            |       |       |
|                         | Unstandardized Coefficients |                   | Standardized Coefficients  | t     | Sig.  |
|                         | B                           | Std. Error        | Beta                       |       |       |
| (Constant)              | 0.33                        | 0.22              |                            | 1.49  | 0.14  |
| FS                      | 3.54                        | 0.9               | 3.26                       | 3.92  | 0.00  |
| CLS                     | 2.74                        | 0.9               | 2.62                       | 3.03  | 0.00  |
| DS                      | 0.32                        | 0.14              | 0.29                       | 2.27  | 0.000 |
| AN <sub>1</sub>         | 0.26                        | 0.17              | 0.12                       | 1.54  | 0.000 |
| AN <sub>2</sub>         | 0.34                        | 0.19              | 0.15                       | 1.78  | 0.000 |
| AN <sub>3</sub>         | 0.09                        | 0.04              | 0.04                       | 2.52  | 0.000 |
| AN <sub>4</sub>         | 0.07                        | 0.02              | 0.03                       | 3.38  | 0.000 |
| AN <sub>5</sub>         | 0.03                        | 0.01              | 0.01                       | 2.16  | 0.000 |
| AN <sub>6</sub>         | 0.004                       | 0.0013            | 0.000                      | 3.02  | 0.000 |
| K <sub>1</sub>          | 0.01                        | 0.01              | 0.01                       | 2.03  | 0.000 |
| K <sub>2</sub>          | 0.71                        | 0.24              | 0.95                       | 2.96  | 0.000 |
| K <sub>3</sub>          | 0.65                        | 0.25              | 0.45                       | 2.58  | 0.000 |
| K <sub>4</sub>          | 1.27                        | 0.44              | 0.92                       | 2.87  | 0.000 |
| K <sub>5</sub>          | 1.22                        | 0.42              | 1.81                       | 2.9   | 0.000 |
| K <sub>6</sub>          | 0.23                        | 0.08              | 0.15                       | 2.74  | 0.000 |
| K <sub>7</sub>          | 0.13                        | 0.05              | 0.1                        | 2.52  | 0.000 |
| K <sub>8</sub>          | 0.99                        | 0.35              | 0.77                       | 2.84  | 0.000 |
| K <sub>9</sub>          | 0.68                        | 0.26              | 0.55                       | 2.58  | 0.000 |
| K <sub>10</sub>         | 0.95                        | 0.39              | 1.36                       | 2.46  | 0.000 |
| K <sub>11</sub>         | 0.4                         | 0.17              | 0.27                       | 2.29  | 0.000 |
| K <sub>12</sub>         | 0.27                        | 0.09              | 0.18                       | 2.97  | 0.000 |
| K <sub>13</sub>         | 0.42                        | 0.2               | 0.29                       | 2.1   | 0.000 |
| K <sub>14</sub>         | 0.44                        | 0.2               | 0.62                       | 2.22  | 0.000 |
| K <sub>15</sub>         | 0.11                        | 0.03              | 0.15                       | 3.29  | 0.000 |
| K <sub>16</sub>         | 0.47                        | 0.16              | 0.61                       | 3.04  | 0.000 |
| K <sub>17</sub>         | 1.03                        | 0.41              | 1.44                       | 2.49  | 0.000 |
| K <sub>18</sub>         | 0.05                        | 0.02              | 0.07                       | 2.15  | 0.000 |

The results in table 4.3 show that alliance networks have positive moderating on the influence of focus strategy, cost leadership strategy, differentiation strategy and firm performance in telecommunication industries in

Kenya. To further confirm the effect of the moderator, the coefficients of the model without the moderator are compared with the average marginal effect or change of firm performance. If the two are different then there is moderation or else no moderation. The marginal change shows how much firm performance changes by with an increase in one unit of the relevant competitive strategy when the alliance network is incorporated (Githira, Muturi & Nasieku, 2019a; Githira, Muturi & Nasieku, 2019b). This is achieved by differentiating model 3.3 partially and incorporating the respective moderating alliance value.

The moderating effect of alliance networks on the influence of focus strategy on firm performance of the telecommunication industry in Kenya was partially obtained by differentiating equation 3.3 with respect to focus strategy (FS) as shown in equation 4.1.

$$\frac{\delta fP}{\delta fs} = \beta_1 + \beta_{10} * K_7 + \beta_{11} * K_8 + \beta_{12} * K_9 + \beta_{13} * K_{10} + \beta_{14} * K_{11} + \beta_{15} * K_{12} \dots \dots \dots 4.1$$

Substituting for actual values from Table 4.25 to equation 3.4, we obtain,

$$= 3.54 + 0.01 * K_1 + 0.71 * K_2 + 0.65 * K_3 + 1.27 * K_4 + 1.22 * K_5 + 0.23 * K_6$$

Since the alliance network was ordinal in nature, their respective marginal contribution will be estimated with consideration of other alliances having zero contribution (Wairimu, Muturi & Olouch, 2019). Hence, marginal effect of the various alliance networks is as follows, diagonal alliances on firm performance will be  $(3.54 + 0.01 * 1 = 3.55)$ , joint ventures on firm performance will be  $(3.54 + 0.71 * 1 = 4.25)$ , equity alliances on firm performance will be  $(3.54 + 0.19 * 1 = 4.19)$ , horizontal alliances on firm performance will be  $(3.54 + 1.27 * 1 = 4.81)$ , vertical alliances on firm performance will be  $(3.54 + 1.22 * 1 = 4.76)$  and franchises on firm performance will be  $(3.54 + 0.23 * 1 = 3.77)$ . From the study findings it can be implied that the best networking alliance for telecommunication companies that have adopted focus strategy is horizontal alliances, followed by vertical alliances, joint ventures, equity alliances, franchises and diagonal alliances with the lowest contribution.

The moderating effect of alliance networks on the influence of cost leadership strategy on firm performance of the telecommunication industry in Kenya was partially obtained by differentiating equation 3.3 with respect to cost leadership strategy (CLS) as shown in equation 4.2.

$$\frac{\delta fP}{\delta cls} = \beta_2 + \beta_{16} * K_{13} + \beta_{17} * K_{14} + \beta_{18} * K_{15} + \beta_{19} * K_{16} + \beta_{20} * K_{17} + \beta_{21} * K_{18} \dots \dots \dots 4.2$$

Substituting for actual values from Table 4.25 to equation 4.5, we obtain,

$$= 2.74 + 0.13 * K_1 + 0.99 * K_2 + 0.68 * K_3 + 0.95 * K_4 + 0.40 * K_5 + 0.27 * K_6$$

The marginal effect of the various alliance networks is as follows: diagonal alliances on firm performance will be  $(2.74 + 0.13 * 1 = 2.87)$ , joint ventures on firm performance will be  $(2.74 + 0.99 * 1 = 3.73)$ , equity alliances on firm performance will be  $(2.74 + 0.68 * 1 = 3.42)$ , horizontal alliances on firm performance will be  $(2.74 + 0.95 * 1 = 3.68)$ , vertical alliances on firm performance will be  $(2.74 + 0.40 * 1 = 3.14)$  and franchises on firm performance will be  $(2.74 + 0.27 * 1 = 3.01)$ . From the study findings it can be implied that the best networking alliance for telecommunication companies that has adopted cost leadership strategy is joint venture alliances, followed by horizontal alliances, equity alliance, vertical alliance, franchises and diagonal alliances with the lowest contribution.

The moderating effect of alliance networks on the influence of differentiation strategy on firm performance of the telecommunication industry in Kenya was partially obtained by differentiating equation 3.3 with respect to differentiation strategy (DS) as shown in equation 4.3.

$$\frac{\delta fP}{\delta ds} = \beta_3 + \beta_{22} * K_{19} + \beta_{23} * K_{20} + \beta_{24} * K_{21} + \beta_{25} * K_{22} + \beta_{26} * K_{23} + \beta_{27} * K_{24} \dots \dots \dots 4.3$$

Substituting for actual values from Table 4.25 to equation 4.3, we obtain,

$$= 0.32 + 0.42 * K_1 + 0.44 * K_2 + 0.11 * K_3 + 0.47 * K_4 + 1.03 * K_5 + 0.05 * K_6$$

The marginal effect of the various network alliances is as follows, diagonal alliances on firm performance will be  $(0.32 + 0.42 = 0.74)$ , joint ventures on firm performance will be  $(0.32 + 0.44 = 0.76)$ , equity alliances on firm performance will be  $(0.32 + 0.11 = 0.43)$ , horizontal alliances on firm performance will be  $(0.32 + 0.47 = 0.79)$ , vertical alliances on firm performance will be  $(0.32 + 1.03 = 1.35)$  and franchises on firm performance will be  $(0.32 + 0.05 = 0.37)$ . From the study findings it can be implied that the best networking alliance for telecommunication companies that has adopted differentiation strategy is vertical alliances, followed horizontal alliances, joint ventures, equity alliances, franchises and diagonal alliance with the lowest contribution. In order to provide information on the suitable forms of alliance network for various strategies, a ranking was done as presented in Table 4.4.

**Table 4.4: Ranking of Alliance Networks for firms with different Competitive Strategies**

| Independent              | Network Alliance | Estimation Formula          | Calculation     | Value | Rank |
|--------------------------|------------------|-----------------------------|-----------------|-------|------|
| Focus Strategy           | Diagonal         | $= \beta_1 + \beta_{10}K_1$ | $= 3.54 + 0.01$ | 3.55  | 6    |
|                          | Joint Venture    | $= \beta_1 + \beta_{11}K_2$ | $= 3.54 + 0.71$ | 4.25  | 3    |
|                          | Equity           | $= \beta_1 + \beta_{12}K_3$ | $= 3.54 + 0.65$ | 4.19  | 4    |
|                          | Horizontal       | $= \beta_1 + \beta_{13}K_4$ | $= 3.54 + 1.27$ | 4.81  | 1    |
|                          | Vertical         | $= \beta_1 + \beta_{14}K_5$ | $= 3.54 + 1.22$ | 4.76  | 2    |
|                          | Franchises       | $= \beta_1 + \beta_{15}K_6$ | $= 3.54 + 0.23$ | 3.77  | 5    |
| Cost Leadership Strategy | Diagonal         | $= \beta_2 + \beta_{16}K_1$ | $= 2.74 + 0.13$ | 2.87  | 6    |
|                          | Joint Venture    | $= \beta_2 + \beta_{17}K_2$ | $= 2.74 + 0.99$ | 3.73  | 1    |
|                          | Equity           | $= \beta_2 + \beta_{18}K_3$ | $= 2.74 + 0.68$ | 3.42  | 3    |
|                          | Horizontal       | $= \beta_2 + \beta_{19}K_4$ | $= 2.74 + 0.95$ | 3.68  | 2    |
|                          | Vertical         | $= \beta_2 + \beta_{20}K_5$ | $= 2.74 + 0.40$ | 3.14  | 4    |
|                          | Franchises       | $= \beta_2 + \beta_{21}K_6$ | $= 2.74 + 0.27$ | 3.01  | 5    |
| Differentiation Strategy | Diagonal         | $= \beta_3 + \beta_{22}K_1$ | $= 0.32 + 0.42$ | 0.74  | 4    |
|                          | Joint Venture    | $= \beta_3 + \beta_{23}K_2$ | $= 0.32 + 0.44$ | 0.76  | 3    |
|                          | Equity           | $= \beta_3 + \beta_{24}K_3$ | $= 0.32 + 0.11$ | 0.43  | 5    |
|                          | Horizontal       | $= \beta_3 + \beta_{25}K_4$ | $= 0.32 + 0.47$ | 0.79  | 2    |
|                          | Vertical         | $= \beta_3 + \beta_{26}K_5$ | $= 0.32 + 1.03$ | 1.35  | 1    |
|                          | Franchises       | $= \beta_3 + \beta_{27}K_6$ | $= 0.32 + 0.05$ | 0.34  | 6    |

The findings in table 4.4 show that the alliance network significantly moderates the relationship between competitive strategy and firm performance in the telecommunication industry in Kenya. This is shown by increase in the value of the regression coefficients after the moderating variable is introduced in the model 4.4. Specifically, the highest marginal contribution is brought by combination of focus strategy and horizontal alliance (4.81), followed by focus strategy and vertical alliance (4.76), focus strategy and joint venture (4.25), focus strategy and franchises (3.77), cost leadership strategy and equity (3.73), with the least marginal contribution from differentiation strategy and franchises (0.34). These findings correspond to Sompong et al. (2014) who argues that appropriately formed and executed under favorable conditions, alliance networks will

definitely bear fruits. Alliance networks metricized presence of complementary goods and services and competency building. It was confirmed that indeed alliance networks make a positive and significant impact as a moderator. Therefore, the hypothesis that alliance networks have no significant moderating effect on the relationship between competitive strategy and firm performance in the telecommunication industry in Kenya was rejected and concluded that alliance networks have a moderating effect on the relationship between competitive strategy and firm performance in the telecommunication industry in Kenya.

## 5. Conclusions and Recommendations

It is concluded that the best networking alliance for telecommunication companies that have adopted a focus strategy is horizontal alliances, followed by vertical alliances and diagonal alliances with the lowest contribution. Also, it is concluded that the best networking alliance for telecommunication companies that have adopted cost leadership strategy is joint venture alliances, followed by horizontal alliances and diagonal alliances with the lowest contribution. Further, the best networking alliance for telecommunication companies that have adopted differentiation strategy is vertical alliances, followed horizontal alliances and diagonal alliances with the lowest contribution. Overall, the study concludes that alliance networks have positive and significant moderating effect on firm performance in telecommunication industries in Kenya.

On synthesis of competitive strategies and alliance networks, the study recommends adoption of vigorous pursuit of cost reductions, provision of outstanding customer service, improving operational efficiency, controlling quality of products/services, intense supervision of frontline personnel, and development of brand or company name identification, targeting a specific market niche or segment and providing specialty products/services. The more of the stated strategies the telephone service providers adopt, the more competitive they will be. Also, the study recommends that telecommunication industries would adopt the utilization of the various competitive strategies and alliance networks to enhance their performance with the best combination being focus strategy and horizontal strategy.

## References

- i. Andersson, M., & Klepper, S., (2013). *Characteristics and performance of new firms and spinoffs in Sweden, Industrial and Corporate Change*, 22(1),245-280.
- ii. Arasa, R. & Gathanji, L. (2014). *The relationship between competitive strategies and firm performance: a case of mobile telecommunication companies in Kenya. International Journal of Economics, Commerce and Management*, 2(9),1234-1248.
- iii. Bagnoli, C.&Giachetti, C. (2015). *Aligning knowledge strategy and competitive strategy in small firms. Journal of Business Economics & Management*, 16(1), 571-598.
- iv. Barney, J., (1991). *Firm resources and competitive advantage, Journal of Management*, 17(1), 99-120.
- v. Chang, H., Fernando, G. D., & Tripathy, A. (2015). *An Empirical study of strategic positioning and production efficiency. Journal of Operational Research*, 11(1),2–9.
- vi. Ciobota, G., & Velea, A. (2015). *Knowledge horizons -economics the strategic positioning of the financial banking companies – key factor for ach Indonesia competitive advantages. Knowledge Horizons - Economics*, 7(1), 103–106.
- vii. Coccia, M. (2017). *Sources of technological innovation: Radical and incremental innovation problem-driven to support competitive advantage of firms. Technology Analysis & Strategic Management*, 29(9), 1048-1061.
- viii. Galvan, J. L. (2015). *Writing literature reviews: A guide for students of the social and behavioral sciences (6<sup>th</sup> Ed.)*. Glendale: Routledge.
- ix. Githira, C., Muturi, W., & Nasieku, T., (2019a). *Influence of firm financial characteristics on stock return of listed companies in Nairobi securities Exchanges. American Based Research Journal*, 8(3), 86-99.

- x. Githira, C., Muturi, W., & Nasieku, T., (2019b). Influence of firm financial characteristics on stock return of non-financial listed companies in East Africa securities Exchanges. *American Based Research Journal*, 8(3), 100-113.
- xi. Humphreys, A., & Rebecca J. W., (2017). Automated Text Analysis for Consumer Research. *Journal of Consumer Research*, 44(6), 1274–306
- xii. Kenya National Bureau of Statistics (2017). Kenya economic survey 2017. Nairobi: Government Printer.
- xiii. Kihn, L., & Ihantola, E. (2015). Approaches to validation and evaluation in qualitative studies of management accounting. *Qualitative Research in Accounting & Management*, 12(2), 230-255
- xiv. Kotler, P. (2017). *Principles of marketing* (7<sup>th</sup> ed.). Harlow, England: Pearson.
- xv. Krueger, R. A., & Casey, M. A. (2015). *Focus groups: A practical guide for applied research*. Los Angeles, CA: Sage.
- xvi. Kumar, A, Ram B, R, Ramkumar, J, & Kannan, P. K. (2016). From Social to Sale: The Effects of Firm-Generated Content in Social Media on Customer Behavior. *Journal of Marketing*, 80(1), 7–25.
- xvii. Kyengo, J. W., Ombui, K. & Iravo, M. A. (2016). Influence of competitive strategies on the performance of telecommunication companies in Kenya. *International Academic Journal of Human Resource and Business Administration*, 2(1), 1-16.
- xviii. Leung, L. (2015). Validity, reliability, and generalizability in qualitative research. *Journal of Family Medicine and Primary Care*, 4(15), 324-327.
- xix. Linwei, L., Feifei, J., Yunlong, P. & Nengqian J. (2017). Entrepreneurial orientation and strategic alliance success: The contingency role of relational factors. *Journal of Business Research*, 72(1), 46-56.
- xx. Madhok, A., Keyhani, M. & Bossink, B. (2015). Understanding alliance: Adjustment costs and the economics of resource value. *Strategic Organization*, 13(2), 91-116.
- xxi. Manchanda, P, Grant, P, & Adithya P., (2015). Social Dollars: The economic impact of customer participation in a Firm-Sponsored online customer community. *Marketing Science*, 34(3), 367–87.
- xxii. Marshall, C., & Rossman, G. B. (2015). *Designing qualitative research* (6<sup>th</sup> ed.). Thousand Oaks, CA: Sage Publications.
- xxiii. Milat, A. J., Bauman, A. E., & Redman, S. (2015). A narrative review of research impact assessment models and methods. *Health Research Policy and Systems*, 13(1), 18-25.
- xxiv. Muia, F., (2017). Effect of competitive strategies on the performance of insurance companies in Kenya. *Masters of Business Administration*, Unpublished Thesis, USIU-A.
- xxv. Qian, L., & Wang, I.K. (2017). Competition and innovation: The tango of the market and technology in the competitive landscape. *Management Decision in Economics*, 38 (17), 1237–1247
- xxvi. Sathana V, Velnampy T, Rajumesh S (2018) A Conceptual Study of Marketing Strategy and Development of SME. *Journal of Account Marketing*, 7(4), 282-295.
- xxvii. Sklavounos, N. S., Rotsios, K. P. & Hajidimitriou, Y. A. (2015). The impact of age, interdependence and perceived risk of opportunism on inter-partner trust in international strategic alliances. *Procedia Economics and Finance*, 19(1), 175-183.
- xxviii. Sompong, K., Igel, B. & Lawton, S, H. (2014). Strategic alliance motivation for technology commercialization and product development, *Management Research Review*, 37(6), 518-537.
- xxix. Trujillo CM, Long TM. (2018). Document co-citation analysis to enhance transdisciplinary research. *Science Advancement*, 4(1), 12-36.
- xxx. Varma, S., Awasthy, R., Narain, K. & Nayyar, R. (2015). Cultural determinants of alliance management capability – an analysis of Japanese MNCs in India. *Asia Pacific Business Review*, 21(3), 424-448.
- xxxi. Vonortas, N. & Zirulia, L. (2015). Strategic technology alliances and networks. *Economics of Innovation and New Technology*, 24(5), 490-509.
- xxxii. Wanjiru M. M (2016). *Competitive Positioning Through Strategic Alliances*. Nairobi, United States International University.