



THE MEDIATING ROLE OF ENTREPRENUARIAL ORIENTATION ON THE RELATIONSHIP BETWEEN FIRST MOVER STRATEGY AND PERFORMANCE OF SELECTED TELECOMMUNICATION APPLICATION SERVICE FIRMS IN KENYA

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Abstract

In today's world, economic development is promoted through modern telecommunication facilities that ensure rapid transmission of information. Rapid advancement and expansion of network infrastructure and internet technologies has led to growth of telecommunication application service firms. However dynamics in the telecommunication sector is rapidly changing as a result application service firms are experiencing declining performance. Rapid growth in the sector has increased competition leading to loss of customers, firm reputation and declining profitability. Developing a strategy that can cope in a chaotic environment is very critical for application service firms. The first mover strategy is a phenomenon adopted by first movers where competitive advantage can be created and sustained. Entrepreneurial orientation

enhances the ability of first movers to discover and exploit opportunities that emerge in a changing environment. This study sought to investigate first mover strategy and performance of selected telecommunication application service firms in Kenya and the mediating role of entrepreneurial orientation. The study was grounded on the game theory, goal setting theory and entrepreneurial orientation theory. The target population was 21 selected application service firms. Primary data was collected using semi-structured questionnaires, while secondary data was collected from Communication Authority (CA). Descriptive and inferential statistics were used to analyze quantitative data. Hypotheses testing was conducted at 5% level of significance using P-value to assess significance. The study findings revealed that the indicators of first mover strategy which included barrier to entry strategy, quality improvement strategy and niche market penetration strategy have a positive and significant effect on performance. In additionally, entrepreneurial orientation partially mediates the relationship between first mover strategy and performance. Therefore firms in the sector should consider to adopt and leverage on first mover strategy to improve on firm performance.

Keywords: First Mover Strategy; Barrier to Entry Strategy; Quality Improvement Strategy; Mass Market Strategy; Niche Market Penetration Strategy, Entrepreneurial Orientation, Firm Performance; Telecommunication Application Service Firms

INTRODUCTION

Telecommunication industry has been largely state-owned, however reforming the sector has been critical for governments to improve efficiency and performance (Ariff, Cabanda & Sathye, 2009). Deregulation in the sector has prompted the need of quality products and services that result to superior performance (Monday, Akinola, Ologbenla & Aladeraji, 2015). According to Narayana, (2011) deregulation, privatization and competition are the key determinants of economic growth in the telecommunication sector. However, there exists a gap between growth in customer-base, data traffic and the growth in revenue for telecommunication firms. For instance in Europe, reports indicated that data traffic and mobile subscribers had increased while revenue had declined, (Oertzen & Asensio, 2017). In addition there was reduction in market share and profitability as a result of price undercutting, blocking of mergers and takeover by regulators. Similarly, rapid growth in terms of subscribers in Indonesia is not in line with revenue generated. For instance, the low pricing strategy adopted by firms due to competition on undifferentiated services and emerging technology has resulted in low profitability (Wulansari, Rismayani & Pramudiana, 2015).

Entry of new foreign and domestic telecommunication firms in Africa has led to intense competition, inevitably impacting the profitability of firms in the sector, (Djiofack-zebaze & Keck, 2009). According to Yeboah-asiamah, Narteh and Mahmoud, (2018) growth in telecommunication sector has increased competition and as a result firms are experiencing poor customer retention and declining profitability. Consequently, in Kenya, strategies considered by the telecommunication firms must be able to anticipate, create and respond effectively to both internal and external environment changes, (Letangule & Letting, 2012). Kipkirong and Rabach, (2013) contends that for firms to respond to actual and expected changes, there is need for firms to be proactive as well as formulate responsive strategies.

Creating strategy for the future in order to cope with a chaotic environments where markets and industries continuously emerge, collide, split, evolve and decline is amongst the most critical challenge in business. The firm's ability to handle uncertainty by intensifying resilience and adaptation to the changing environment is one of the prime antecedent of success (Vecchiato, 2015). Firms can integrate a first mover strategy in order to be successful (Malik, 2012; Mueller, Titus, Covin, & Slevin, 2012; García-Villaverde, Parra-Requena, & Ruiz-Ortega, 2017; Hsiao, Chen, Guo, & Hu, 2017). Rapid changes and innovations in technology have made the first mover strategy a must-have for firms aspiring to perform at their best. First mover advantages are achieved through a collaboration of firm resources and capabilities. Yet, superior performance is not guaranteed even when a firm owns resources and capabilities. laquinto, (2011), in support of this argument, proposed that when a firm's intended strategy is to be a first mover, then their intentions should determine the behaviour and decisions undertaken to improve performance.

Performance outcomes derived from the strategy occur when asymmetry is developed between a firm and its competitors from the firm's possession of unique resources (Koch, 2014). The lack of a strategy by a first mover provides a platform where late entrants enjoy the benefits of free ride (Koch, 2014). Cleff and Rennings, (2012), argued that in a highly competitive environment, first mover advantages are likely not to last, however a successful first mover strategy can be achieved through technological leadership, strong R&D, large scale marketing, production, and distribution capabilities. Building from prior research Lieberman and Montgomery, (2013) argued that to overcome a situation where first mover advantages may be significantly undermined, the first mover must have a strategy to cope with conditions encountered for superior performance. The telecommunications industry is seen to be concentrated or competitive, therefore adopting a first mover strategy is likely to result in a larger market share (Karabag & Berggren, 2011). The size of the market share counts much

when a firm can effectively use its competitive advantage to rise above the inconsistencies of both internal and external environments.

Entrepreneurial orientation (EO) enhances the firm's ability to discover and exploit resources, breaking rules that exist as well as initiation of new institutional paradigms within the market, thus improving on firm performance (Khanna & Palepu, 2010). The concept of Entrepreneurial orientation (EO) is considered to be associated with strategic management as well as strategic decision making process that is at the firm level. It is the organisation enthusiasm to explore and to undertake new opportunities as well as the responsibility to affect change (Zehir, Can, & Karaboga, 2015). Bendickson, (2016) argues that EO was emphatically and actively linked to financial performance which can be measured in terms of archival and perceived financial performance, and non-financial performance such as satisfaction. However, Alegre and Chiva, (2013) contradicted this by arguing that some studies show a non-significant relationship.

First Mover Strategy

According to Jiang, Li, Liu and Tao, (2017), a first mover is a firm that is the first to implement a specific strategy within a given opportunity. Hence a first mover strategy is associated to service, process or product strategy. Jakopin and Klein, (2012), conceptualized the first mover strategy as a strategy undertaken by a firm by intentionally being first to introduce a product or service in the market and thus achieve a competitive advantage thereby establish strong resource position barriers for follower firms. Markides and Sosa, (2013) proposed the first mover strategy as a strategy adopted by a pioneer firm to exploit first mover advantages, by creating sustainability. Sustainability depended on initial and subsequent resources as well as capabilities relative to the quality of capabilities and resources owned by late entrants. Besharat, Langan, and Nguyen, (2016) viewed first mover strategy as a phenomenon where firms derive competitive advantage from being first in the market. While according to Hsiao *et al.*, (2017), first mover strategy allows a firm to overtake its competitors with more potent resources and capabilities that are more dynamic. Firms that adopt a first mover strategy could create customer switching costs, pre-occupy scarce resources and attain leadership positions (Lee, John & Fong, 2018). However, in order to benefit from the first mover advantages, a firm needs to own resources and capabilities that can exploit the opportunities presented successfully.

The first mover strategy debate arises from discussions by prior scholars in strategy on first mover advantages sustainability, as well as the question of whether being a pioneer in a market is sufficient to generate the desired advantages. Thus, Vecchiato, (2014) opined that

first mover advantage are major benefits gained by a firm as a result of pioneering, through market change anticipation as well as disadvantages encountered by a late mover that fails to foresee such changes. Walter, Edelman and Hatten, (2016) perceived the first mover advantages as the gains in performance that was attained by a firm for being first to introduce a new product category in the market when there was control on firm resources and lead time. Environmental changes provide the opportunity to first movers; however, the firm must first own the resources and organisational skills that can be strategized to capitalize on such opportunities. That meant that competitive advantage must be maintained continuously (Kaličanin, 2008).

The lack of a strategy by a first mover provides a platform where late entrants enjoy the benefits of free ride (Koch, 2014). Cleff and Rennings, (2012), argued that in a highly competitive environment, first mover advantages are likely not to last, however a successful first mover strategy can be achieved through technological leadership, strong R&D, large scale marketing, production, and distribution capabilities. Building from prior research Lieberman and Montgomery, (2013) argued that to overcome a situation where first mover advantages may be significantly undermined, the first mover must have a strategy to cope with conditions encountered for superior performance.

Extensive research by Yannopoulos, (2013) looked at successful strategies employed by first movers. The strategies proposed in the study include building complementary assets, barrier to entry, exploitation of distribution advantage, quality improvement, continuous innovation, and reaction to new entry, time-in market advantages, mass market dominance and niche market penetration strategy. Whilst, Iaquinto, (2011) proposed new product development strategy for firms whose intended strategy is to be first entrants in a market or industry. However the strategy could only be suitable when technological development is rapid, economic growth and the acceptance of consumers to new products is equally quick. Wunker, (2012) examined niche penetration strategy for superior product reputation, value chain strategy for a solid ecosystem where a firm sought to be the industry standard and facilitated-network strategy to penetrate a nascent industry. While Markides and Sosa, (2013) examined the mass dominance strategy for first mover firms. Walter, Edelman, and Hatten, (2016) examined innovation and quality improvement strategy to adapt new firm capabilities. This study adopted the first mover strategy as proposed by Jakopin and Klein, (2012) and Yannopoulos, (2013), which included barrier to entry strategy, quality improvement strategy, mass market dominance strategy and niche market penetration strategy.

Statement of Problem

According to CA reports, (2021) the overall market share in the telecommunication sector for the third quarter of financial year 2020/21 declined by 1.5%. In addition the sector had recorded a decline in growth from 11.3% in 2018 to 8.8% in 2019, (CA, 2019). Further, CA ICT survey (2016), shows that the number of firms offering application services have increased, however, the cut throat competition had resulted to a downward trend in performance. For instance, CA reports (2017) on mobile services indicated that Safaricom Limited market share reduced from 71.2% in 2016 to 69.1% in 2017 and 63.3% in 2018. Airtel market share reduced from 17.6% in 2016 to 17.2% in 2017. While Finserve market share reduced from 4.7% in 2017 to 4.2% in 2018 and 3.6% in 2019. Telkom market share 5 to 8.1% in 2019 from 8.8% in 2018. Further firms offering data and internet services such as Jamii Telecommunication Limited market share reduced by 1.3% from 2017 to 2018, while Liquid Telecommunication market share also reduced from 3.0% in 2017 to 2.2% in 2018. This decline could be attributed to changing customer demands and advancement in technology, but further enquiry is paramount.

Literature review on first mover strategy revealed a number of research gaps. For instance, empirical study by Jiang, Li, Liu and Tao, (2017) conceptualised first mover strategy as product market diversification and geographic market diversification. While, Hsiao, Chen, Guo and Hu, (2015) study conceptualised first mover strategy as technical and managerial capacity. Problem solving, decision making, staff retention, managing collaborations and networks were technical capacity indicators, whereas managerial capacity indicators were technology, technical expertise, and expertise in product development. Consequently, more studies are needed to get consensus on conceptualization of first mover strategy as well as indicators for use in measurement. While the majority of the literature reviewed in this study focused on the direct relationship between first mover strategy and firm performance, there was a gap in the literature on the mediating effects of entrepreneurial orientation on the relationship between strategy and firm performance. Thus, strategic decisions and the allocation of resources may be influenced by EO, therefore firms applying appropriate strategic orientation could identify the opportunities that the environment provided and thus achieve superior performance (Rosenbusch *et al.*, 2013). Therefore, based on this background the study sought to give empirical evidence on the effect of first mover strategy on the performance of telecommunication application service firm in Kenya, mediated by entrepreneurial orientation.

THEORETICAL REVIEW

Game Theory

According to Neumann and Morgenstern, (1944), the Game Theory was postulated as a branch of mathematics concerned with analyzing strategies in a competitive environment where the outcome of one participant is reliant on the outcomes of other the participants (Cano, Capone, Carello & Cesana 2016). Accordingly, game theory is founded on two primitives, game form and strategy. Consequently, Rubinstein, (1991), contends game form includes a list of decision problems for each participants, while strategy is the comprehensive explanation of the players actions in the game from the start to the end. The two perspectives of the theory are; cooperative game theory approach where there is an assumption there is communication among players, they can form temporary alliances and that agreements can be signed to bind them together. While in the non-cooperative theory, the players do not communicate and it is therefore not possible to have a contract that is binding. Shubik, (1972), advancements constituted a wider scope of theory which describes goal orientation, conscious and process for which players make decisions.

Game theory is related to the action of decision makers who are conscious that their actions affect each other. Charilas and Panagopoulos, (2010) opined that the decision makers actions are conscious and they have an effect on each other. Further, there is a set of finite of players and a principal, whose selection of strategy is influenced by the objective of maximizing utilities. In addition game theory provides a framework that guides in the understanding of first mover strategy and its effect on performance of selected telecommunication application service firms. This theory posits the rationale of strategies developed by examining a firms existing situation and then developing alternative strategies based on the information provided. When analyzing how payoffs are achieved then the best strategy is based on the anticipated actions of its competitors and other relevant information gathered that leads to attaining superior firm performance. According to the theory, a first mover can influence the outcome when they aware of competition thereby making the right strategic decision.

Goal Setting Theory

According to Locke and Latham, (1990), Goal Setting Theory states that outcomes are high when goals are challenging, specific and attainable. When a goal is very specific, performance is less varied due to elimination of vagueness on the expected outcome. Consequently, the greatest level of effort and performance were achieved when the goals are most difficult, (Locke, Chah, Harrison & Lustgarten, 1989). Further, goals were perceived to be future valued outcomes, therefore goal setting was a discrepancy-creating process, implying

that there must be some dissatisfaction with the current situation and thus a need to achieve a certain outcome. Locke and Latham, (2006), advanced the theory by discussing four mechanisms that elaborate effects that are instrumental to specific goals in order to achieve high performance. These are the choice to exert effort in a certain direction or certain task, persistence when doing so until the goal is achieved and the strategy. Latham, Seijts and Slocum, (2016) postulate three types of goals that is performance, behavior and learning goals. Performance goals focus on outcomes such as sales, profitability, while behavior goals is where individual behavior is measured for a given period and learning goals emphasis implementation of effective plans, processes or procedures necessary to perform a task.

In view of this, firm can set specific goals that are influenced by past performance. Clarity of goals is when a goal is clear, measureable and timely. In addition, difficulty in goals attainment motivates firms to strive for positive goal achievement. Goal commitment makes the firm make deliberate efforts to achieve the goals. Feedback helps adjust goal setting while task complexity makes achieving of goals easier by laying down processes and steps (Locke & Latham, 2006). Participation within the firm in goal setting develops into a sense of responsibility which in turn improves performance (Mazzei, Flynn & Haynie, 2016). Hence, the independent and dependent variables were informed by the postulates and advancements of the goal setting theory. These propositions raise the need of telecommunication application service firms to set specific performance measures based on past performance.

Theory of Entrepreneurial Orientation

The Theory of Entrepreneurial Orientation was postulated by Miller, (1983) and Lumpkin and Dess, (1996). According to Miller, (1983), firms that are entrepreneurial oriented engage in innovation which are product-market driven, pertakes fairly risky projects, proactively initiates innovations thus performing better than competitors. Conversely, Lumpkin and Dess, (1996), cited entrepreneurial orientation (EO) as processes, practices and activities leading to decision making which marshal towards an entry that is new. Additional Covin and Slevin, (1993) proposed three important components which are proactiveness, innovativeness and risk- taking (Miller, 1983). Accordingly, innovativeness is the propensity of firm to undertake ideas that are new, processes and experiments that are creative resulting to processes, services and products that are new (Lumpkin & Dess, 1996). According to Miller and Friesen, (1978) risk taking is a reflection of activities of entrepreneurial firms such as making resource commitments to obtain soaring proceeds through taking advantage of the opportunities provided in the market.

Lumpkin and Dess, (1996) advanced the theory by proposing other dimensions, that is, competitive aggressiveness and autonomy. The propensity to respond to competitors promptly as well as exceedingly in order to improve on its position or even perform better than the rivals in the industry was perceived as competitive aggressiveness. Whilst individuals or team that focused on the creation of a business vision from the start to finalization is referred to as autonomy. Autonomy which roots from Mintzberg and Water, (1985) opines that entrepreneurs are leaders who are strong, whose decision making process necessitates decisive and risky actions, thus entrepreneurial autonomy can be linked to entrepreneurs freedom to action and make decision that are not dependent. EO is thought to have evolved from the resource-based view and the dynamic capabilities view (Teece, 2007; Barney, 1991; Grant 1991).The mediating variable indicated in the conceptual framework are informed by the theory of entrepreneurial orientation. Specifically, this study has adopted innovativeness, risk-taking, proactiveness, competitive aggressiveness and autonomy as dimensions of entrepreneurial orientation.

EMPIRICAL LITERATURE REVIEW

Empirical evidence on barrier to entry strategy and firm performance applied diverse aspects of barrier to entry in establishing the relationship. For instance, Niu, Dong and Chen, (2012) study revealed financial requirements and incumbent advantages as common measures, government policy, sunk costs and managerial experience varied, while switching costs, patents and intellectual property were found not to be measures of barrier to entry. Kappes and Merkert, (2013) examined on the perception of managers on barrier to entry strategy in the context of European airline market. The findings indicated that barrier to entry is an effective strategy in the airline sector. The most significant barrier to entry strategy indicators perceived by airline managers were superior geographical space, high competition from other sectors, setup costs, perceived industry standard and buyer switching costs.

Thomas, (2013) focused on the effectiveness of computed-based and face-to face communication channels on product quality improvement and market performance of manufacturing firms in United States. The results indicate efficiency and effectiveness in quality improvement can lead to sales, market share and profit objectives being achieved. Herzallah, Gutherrez and Rosas, (2016), investigated quality improvement, competitive strategies and financial performance of Palestinian manufacturing firms. Quality improvement was measured as customer focus, process management, teamwork and training. The findings indicated that quality improvement strategy is positively related to financial performance. The ability to implement quality improvement leads to competitive advantage. Firms are able to pursue new

opportunities through differentiation and innovation and at the same time exploit current abilities.

Abel, (2008) investigated the resources and capabilities of first movers for establishing market dominance in the context of digital audio player. The study traced the history of MP3 category identifying the inventor, the product pioneer and the first to market. The study indicated that Apple was able to gain market dominance because they were a recognised brand, possessed more resources and capabilities and cost of production was low. The control of distribution channels reduced price competition to gain market share. The product met the customer requirements thus leading to customer loyalty. Velu, (2015) investigated the mass market dominance strategy and competition in the context of securities sector in America. The findings indicated that firms were able to remain competitive through activities that led to market protection and growth, incremental improvement of business models or radically altering the business models. Additionally, market dominance strategy was viewed as a defensive strategy to protect existing business models. This study perceived market dominance strategy as an adaptive strategy for firms in the telecommunication sector.

Toften and Hammervoll, (2010) investigated the strategic capabilities owned by firms that adopted niche marketing strategy in seafood and wine industries. The sample size comprised of six firms located in France, Norway and Portugal. The findings concur with prior studies in niche marketing contending specialisation, differentiated products, strong relationships and limited target affirm niche marketing strategy assumptions. The strategic capabilities were found at different level of the value chain and are imperative for the success of the firms. Cuthbert, (2011) investigated adoption of niche strategy as an adaptive strategy for niche markets. Data was collected in the blackcurrant industry, from eleven firms in New Zealand and Canada in the blackcurrant industries. The findings indicated that alliances, horizontal and vertical networks developments leads to success of niche market strategy. Resources can be shared by the adoption of horizontal alliances, while the distance between the firm and its final customer can be shorten through vertical alliances. Further horizontal and vertical alliances provide a way for market research and customer relationship management.

Gruber-muecke and Hofer, (2015) evaluated the effect of market and entrepreneurial orientations on performance of firms in an emerging market. EO was operationalised in three dimensions of innovativeness, proactiveness and management professionalization. The findings indicated that EO and firm performance have moderate correlation, thus EO has an impact on performance of firms in emerging market. Zehir, Can and Karaboga,

(2015) study examined the relationship between EO and firm performance, mediated by innovation performance and differentiation strategy. EO was conceptualised as innovativeness, competitive aggressiveness, risk-taking, as well as autonomy. The outcome showed that innovativeness, proactiveness and autonomy significantly affect performance of firms. Differential strategy and innovation mediated EO and firm performance relationship.

Shirokova *et al.*, (2016) investigated the association of entrepreneurial orientation, environmental hostility and performance of SME's in Russia and Finland . From the analysis the relationship between EO and performance is significant, confirming RBV and DC theories. However the configuration of variables in the external environment determined the direction and strength of the relationship. Sok, Snell, Thomas and Sok (2017) focused on the underlying processes and the specific conditions that facilitate EO to contribute to performance. The results indicated that the association of EO and firm performance was mediated by marketing capability and moderated by marketing resources. Hence EO significantly and positively relates to firm performance in small firms. Further, performance of small firms was influenced by entrepreneurial activities that focus strongly on marketing capability. As indicated from the above analysis, entrepreneurial orientation significantly influence firm performance and hence the direct relationship. The studies also indicates that firms need to develop towards adopting entrepreneurial orientation. Innovativeness, competitive aggressiveness, risk-taking and autonomy were used as indicators of entrepreneurial orientation in the study.

Conceptual Framework and Hypotheses

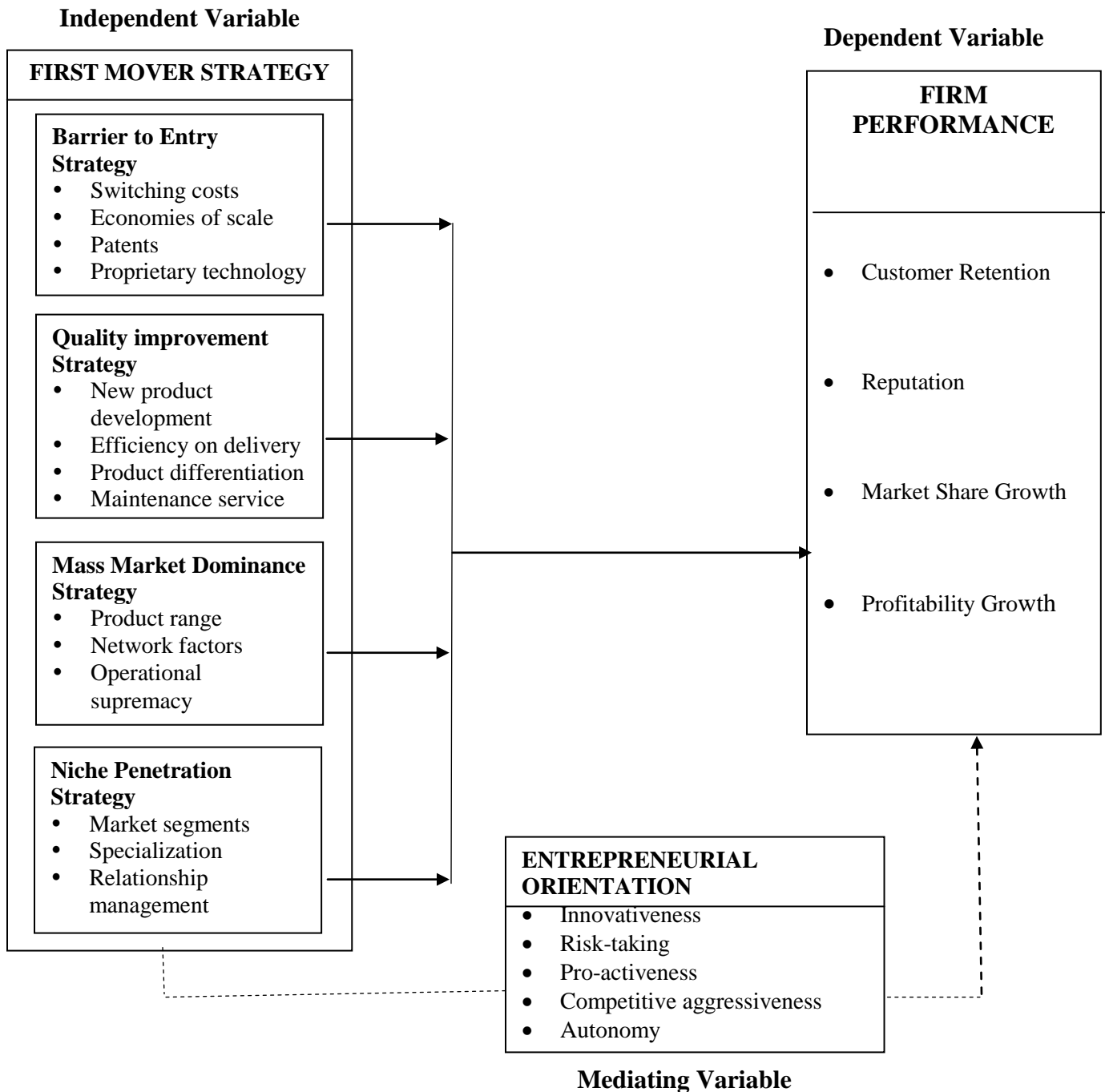
H₀₁ Barrier to entry strategy has no significant effect on performance of selected telecommunication application service firms in Kenya.

H₀₂ Quality improvement strategy has no significant effect on performance of selected telecommunication application service firms in Kenya

H₀₃ Mass market dominance strategy has no significant effect on performance of selected telecommunication application service firms in Kenya.

H₀₄ Niche market penetration strategy has no significant effect on performance of selected telecommunication application service firms in Kenya.

H₀₅ Entrepreneurial orientation has no significant mediating effect on first mover strategy and performance of selected telecommunication application service firms in Kenya



RESEARCH METHODOLOGY

Research Design

The research philosophy aids in the refinement and clarification of the overall research strategy to be used in the study, (Crossan, 2015). It relates to the development of knowledge whose purpose is simply answer a specific problem of a particular nature, nonetheless developing new knowledge (Saunders, Lewis & Thornhill, 2009). This study's epistemological position is positivism because positivism is based on facts that are real, it is objective can be

measured, results are neutral and valid, (Saunders, 2011). Additionally, positivist paradigm aims to establish objective facts by empirically discovering relationships between variables. The study adopted descriptive and explanatory research design to collect quantitative data, it was further compiled for qualitative follow-up and to have a clear understanding of the quantitative results, (Crewell & Clark, 2011).

Empirical models were used to test the statistical significance of the relationship between the v According to Cooper and Schindler, (2011), multiple regression model is suitable for predicting values of dependent variable where various independent variables are involved. The combined multiple regression model for determining the effect of multiple predictor variables was stated as follows:

$$YF = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y_F = Composite Index for performance of Telecommunication Application Service Firms

β_0 = Constant

$\beta_1 - \beta_4$ = Regression coefficients of independent variables that is X_1 , X_2 , X_3 and X_4 respectively

X_1 = Barrier to Entry strategy

X_3 = Quality Improvement strategy,

X_3 = Mass Market Dominance strategy

X_4 = Niche Market Penetration strategy

ε = Error term

To evaluate if entrepreneurial orientation mediates first mover strategy and performance of selected telecommunication application service firms in Kenya, this study used Baron and Kenny's (1986) four-step causal path. According to Mackinnon, (2000), the three main ways of analysing statistical mediation are casual steps, difference in coefficients and lastly, product of coefficients. The casual steps approach by Baron and Kenny (1986) is the most widely used (Mackinnon, Fairchild & Fritz, 2007). The approach is appropriate because of to its ability to assess linear effects, nonlinear effects and interaction effects between variables. It is has been supported by Imai, Keelel and Tingley, (2010) and Maina, (2014) since it is more robust to certain forms of specification error than product of coefficients approach proposed by Fairchild and Mackinnon, (2009) to test indirect effects and total effects.

Target Population

The study was a census of 21 selected telecommunication application service firms selected from the list of Application Service Providers as provided by Communications Authority. The targeted application service firms were those telecommunication firms currently benefiting from the

first mover advantages. 21 telecommunication application firms were purposely selected based on mechanisms that lead to the first mover advantages. The mechanisms for this selection were switching costs, technological leadership and pre-emption of scarce resources and switching costs. Purposive sampling technique was adopted to select the respondents. A sample size of 105 was hence selected through purposive sampling. The unit of analysis for the study was the twenty-one selected telecommunication application service firms in Kenya. The unit of observation was the heads of the functional areas of marketing, finance, operations and strategy/business development as well as the managing director in each of the selected firms.

Data Collection Instruments, Validity and Reliability

Both primary and secondary data was used to collect data. To collect the primary data a semi-structured questionnaire consisting of a 5-point Likert scale and open-ended questions. Secondary data was obtained from Communications Authority. According to Mugenda & Mugenda,(2003), concerns of validity ensure integrity on the conclusions from the study. Content and face validity on the data collection instrument was ensured. To observe content validity, the researcher ensured the questions confirmed to objectives, in addition, subjected to reviews from supervisors in the School of Business as well as experts in the area of specialization. While face validity was measured through units of analysis from the given population. Further, validity was measured through extensive review of existing relevant body of literature and guided by the set of research variables adopted in this study.

Prior to data collection a pilot test on 10% of the sample was conducted to ensure there was consistency of results on repeated trials on the research instrument. The Cronbach's alpha coefficient has been extensively applied as a measure of reliability in social science (Bonett & Wright, 2014), it establishes the internal consistency of the research instrument. According to Field (2009), a Cronbach Alpha of 0.7 and above is considered a satisfactory indicator of reliability and hence adopted in this study.

Table 1: Summary of the Reliability Tests

Variable	Cronbach's Alpha	No. of Items	Remarks
Barrier to entry Strategy	.875	8	Reliable
Quality improvement strategy	.949	8	Reliable
Mass market dominance strategy	.926	6	Reliable
Niche penetration strategy	.924	6	Reliable
Entrepreneurial orientation	.968	14	Reliable
Firm performance	.958	10	Reliable

Data Analysis

After collection data, cleaning and coding was done to facilitate statistical analysis. Descriptive statistics was done using mean scores, frequencies, standard deviations, and percentages while inferential statistics were carried out using correlation and multiple regression analysis. The nature and the strength of the associations was demonstrated using the Pearson's correlation coefficient (r). The coefficient of determination (R^2) was used to measure the variation amount on the outcome variable as explained by the predictor variable.

The research hypotheses testing was conducted at a 95 percent level of confidence to determine whether the influence of the independent variable is significant or not. In order to make decision on the null hypothesis, the researcher used the p-values in the hypothesis test. If found that the p-value was less than 0.05, then the null hypothesis was rejected and therefore the alternate hypothesis accepted. Qualitative data was analyzed using conceptual content analysis to establish meaning, interpret and draw conclusions (Glesne, 2015).

RESULTS

Response Rate

Table 2: Response Rate Analysis

Responses	Frequency	Per Cent
Returned Questionnaires	80	76.19
Unreturned Questionnaires	25	23.81
Total	105	100

Table 2 indicates there was response rate of 76.19% implying that 80 respondents returned the questionnaires properly filled, which was acceptable to conduct analysis. The busy schedules of the respondents accounted for the unreturned questionnaires at 23.81%. Saunders, Lewis and Thornhill (2007) argued that a response rate of above 50% is justifiable for conducting analysis. Hence, based on that recommendation, this study proceeded with data analysis for the purpose of drawing conclusions and making inferences.

Analysis on Respondents Post and Years worked in the Organisation

Table 3: Post of Respondent in the Organization

Post held in the Organisation	Frequency	Percent
Chief Executive Officer	6	7.50
Head of Finance	16	20.00
Head of Marketing	19	23.75
Head of Operations	17	21.25
Head of Strategy	8	10.00
Head of Business Development	14	17.50
Total	80	100

The findings in Table 3 show that the highest respondents were heads of marketing at 23.75%, followed heads of operations at 21.25% and heads of finance at 20%. Other positions represented in the sample were heads of business development at 17.7%, heads of strategy at 10% and chief executive officers at 7.5%. The results imply that different heads of the functional areas responsible for corporate strategy, policy formulation, and implementation of strategy were considered for the study. In addition, the respondents are involved in strategic management both at corporate and business level and are therefore appropriate in providing reliable information.

Information on the duration the respondents had worked in the organization was also established. The results are as exhibited in Figure 2.

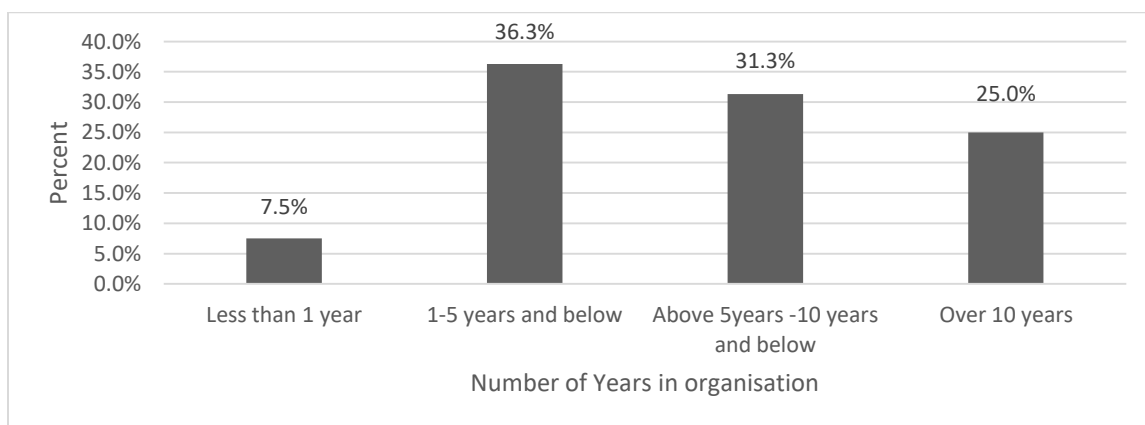


Figure 2: Number of years worked in the organisation

Results on Figure 2 reveal that 36.3% had worked in their respective firms for a period of 1 to 5 years followed by 31.3% who had worked for a period of 5 to 10 years. As indicated by

the results majority of heads of the functional areas had relatively long period of association with the firm and were hence aware of the strategies and policies implemented to enhance firm performance.

Descriptive Statistics

Descriptive Statistics for First Mover Strategy

Table 4: Descriptive Statistics on
Barrier to Entry Strategy

Statement	Mean	Std. Dev.
Customers who buy products from the firm in bulk enjoy certain advantages	4.11	1.02
The proprietary technology (unique technology) owned by the firm have been a source of competitive advantage	4.04	1.14
The firm ensures that new inventions are legally protected (patent)	3.93	1.18
The firm commits to R&D for the development of proprietary technology	3.91	1.12
The firm ensures the telecommunication products acquired for production are bought in bulk	3.83	1.10
The inventions that are legally protected (patent) have had a breakthrough effect in the sector	3.61	1.17
The firm ensures that contracted suppliers incur a cost for not supplying product/service to the firm.	3.35	1.46
The firm ensures there is a cost for the customer to switch from the firm product/service to other competitors.	3.14	1.42
Aggregate mean score and standard deviation	3.74	1.20

Table 4 shows that to a large extent customers who buy in bulk enjoy certain advantages and that the proprietary technology owned by the firm have been a source of competitive advantage as demonstrated by the average scores of 4.11 and 4.04. Additionally, the results also show that to a moderate extent the firm ensured that contracted suppliers incur a cost for not supplying products or service to the firm and that there is a cost for the customer to switch from the firm products and services to other competitors as indicated by mean scores of 3.35 and 3.14. However, there were variations in the responses as indicated by the standard variations of 1.46 and 1.42. The aggregate mean score of 3.74 indicates that barrier to entry was adopted by selected telecommunication application service firms in Kenya to a large extent, but there was variation in the respondents' observations as shown by the standard deviation of 1.2.

Quality Improvement Strategy

Table 5: Descriptive Statistics on Quality Improvement Strategy

Statement	Mean	Std Dev
The firm strives to respond to serve the market efficiently	4.20	1.06
The firm strives to ensure the unique features of the product are maintained	4.20	1.01
The firm ensures the existing product quality is continuously being improved	4.16	0.97
Customers are happy with the response rate on the complains	4.12	0.96
The customers perceive the firm products have more value than other competitors	4.09	1.05
The firm is constantly putting effort in the development of quality new products that meet the customer's needs	4.09	1.02
The firm strives to ensure that services are delivered at the customers convenience	4.03	0.98
The firm has a system that ensure customer complaints are addressed within the shortest time	3.96	0.95
Aggregate mean score and standard deviation	4.11	1.01

The results in Table 5 show to a large extent the firm strives to respond to serve the market efficiently and also ensures the unique features of the products are maintained as indicated by the mean score of 4.20. However, the respondents had variation in their observations as indicated by standard deviations of 1.06 and 1.01 respectively. Overall, the aggregate mean score of 4.11 indicated selected telecommunication application service firms adopted quality improvement strategy to a large extent but there was high variation on the extent quality improvement strategy was adopted as indicated by a standard variation of 1.01.

Mass Market Dominance Strategy

Table 6: Descriptive Statistics on Mass Market Dominance Strategy

Statement	Mean	Std Dev
The firm ensures they maintain a good relationship with partners	4.28	0.98
The firm collaborates with providers of complementary products /services	4.08	1.05
The firm strives to always extend a product line	4.04	1.14
The firm strives to maintain leadership in production more than the other competitors	4.01	1.06
The firm strives to maintain leadership in distribution of products more than the other competitors	4.01	1.01
The firm has a wider range of products/services that serve different markets than the competitors	3.80	1.09
Aggregate mean score and standard deviation	4.03	1.06

The results on Table 6 show that to large extent firms ensure they maintain good relationships with partners, collaborate with providers of complementary products or services and strive to extend a product line demonstrated by average scores of 4.28,4.08 and 4.04 respectively. Additionally,as revealed by average scores of 4.01 and 3.80, to a large extent firms strive to maintain leadership in production and distribution as well as have a wider range of products or services that serve different markets than the competitors. The findings show the aggregate mean score for mass market dominance strategy was 4.03 indicating that respondents to a large extent agree that mass market dominance strategy is adopted by telecommunication application firms in Kenya. However, respondents had variation in their opinion concerning the extent mass market dominance strategy was adopted as shown by the high standard deviation of 1.06.

Niche Penetration Strategy

Table 7: Descriptive Statistics on Niche Penetration Strategy

Statement	Mean	Std Dev
The firm engages in activities that enhance long-term relationship with the customer	4.20	0.99
The firms customized products compete on value	4.19	0.96
The established relationship had led the firm to provide better solutions to the customers	4.09	1.07
The firm has specialized in tailored products for the niche market	4.06	1.00
The market segment is clearly defined by the firm	4.00	1.09
The defined market segment is measurable	3.75	1.04
Aggregate mean score and standard deviation	4.05	1.03

Table 7 shows that to a large extent firms engage in activities that enhance long-term relationship with the customer and customized products compete on value. Further, established relationship had led to providing better solutions to the customers and the firm specialized in tailored products for the niche market. The results shows niche market penetration strategy had aggregate mean of 4.05 indicating respondents to a large extent agree that niche market penetration strategy is adopted by the selected telecommunication application service firms in Kenya. The 1.02 standard deviation evidenced that the respondents had varied views concerning the extent to which these strategy was adopted.

Descriptive Statistics of Entrepreneurial Orientation

Table 8: Descriptive Statistics on Entrepreneurial Orientation

Statement	Mean	Std Dev
The firm promotes new market opportunities	4.33	0.96
The firm is open to new ideas.	4.33	0.95
The firm is willing to identify new market opportunities	4.31	0.98
The firm provides an environment where entrepreneurship is supported	4.30	0.99
Creativity is encouraged in the firm	4.29	1.05
The firm engages in activities that position as the market leader	4.29	1.06
The firm encourages experimentation of new products /services	4.15	0.96
The managers do not take long to act on new opportunities	4.14	0.96
The firm encourages experimentation of new processes	4.02	1.02
The firm aggressively responds to competitors to achieve competitive advantage	4.00	0.98
The managers are willing to make large resource commitments in projects.	3.83	1.05
The firm encourages individuals or teams to engage in entrepreneurial activities	3.80	1.06
The managers in the firm are willing to risk resource in support of projects where the outcome is unknown	3.61	1.20
The individual or teams formed are allowed to make independent decisions	3.60	1.11
Entrepreneurial orientation average	4.07	1.03

From the results shown in Table 8, to a large extent the firm promotes new market opportunities, is open to new ideas , willing to identify new market opportunities and provide an environment where entrepreneurship is supported demonstrated by the average scores of 4.33,4.33 4.31 and 4.30 respectively. However, there was high variation in the opinion of the respondents as indicated by the standard deviation of 0.96, 0.95, 0.98 and 0.99 respectively. Entrepreneurial orientation was adopted in the selected telecommunication application firms in Kenya to a large as evidenced by the average score of 4.07. However, the 1.03 standard deviation indicates there was disparity on the extent of entrepreneurial orientation was adopted in telecommunication firms in Kenya.

Descriptive Statistics for Firm Performance

Table 9: Descriptive Statistics on Performance

	Mean	Std Dev
Customer retention	4.21	0.87
Firm reputation	4.37	0.95
Market share growth	3.21	1.11
Net profit growth	3.20	1.17
Aggregate mean score and standard deviation	3.75	1.03

Table 9 demonstrates aggregate average score of the performance measured in terms of customer retention, firm reputation, market share growth and net profit growth. The aggregate mean score of 3.75 indicate that the respondents agree to a large extent, however as indicated by 1.03 standard deviation, there was high variation in the respondents observations.

Inferential Statistics

Regression Analysis and Hypotheses on the Direct Relationship

Table 10: Empirical Model Coefficients

Model		Unstandardized		Standardized		
		Coefficients		Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.701	0.231		3.032	0.003
	Barrier to entry strategy	0.205	0.075	0.236	2.736	0.008
	Quality improvement strategy	0.189	0.093	0.212	2.04	0.045
	Mass market dominance strategy	0.132	0.075	0.156	1.766	0.081
	Niche penetration strategy	0.343	0.092	0.375	3.716	0.000

a Dependent Variable: Firm performance

The first hypothesis tested was the null hypothesis that barrier to entry strategy has no significant effect on performance of selected telecommunication application service firms in Kenya. Results in Table 10 show a p-value $0.008 < 0.05$ level of significance. The study consequently rejects the null hypothesis concluding that barrier to entry strategy significantly affects performance of selected telecommunication application service firms in Kenya at 0.05 level of significance. The results agree with Kappes and Merkert, (2013) findings that barrier to entry is an effective strategy for performance. In addition, the results agreed with Yang *et al.*,

(2013) findings on the measures adopted by study for barrier to entry strategy and the effect to performance and with Lado-sestayo *et al.*, (2017) on the importance of economies of scale as important measure of barrier to entry. The findings are in support of Game Theory, where in a competitive environment, the firm chooses a non-cooperative game to maximize in creating value, in this context performance in terms of customer retention, firm reputation, market share growth and net profitability, (Ross, 2018).

The second hypothesis tested was the null hypothesis that quality improvement strategy has no significant effect on performance of selected telecommunication application service firms in Kenya. Results in Table 10 show a p-value of $0.045 \leq 0.05$ for quality improvement strategy. Therefore the study rejects the null hypothesis concluding that quality improvement strategy significantly affects performance of selected telecommunication application service firms in Kenya. The results agree with the Lin, Tan and Geng,(2013) that quality improvement strategy does not significantly influence performance however performance can be significant when a firm is able to manage demand. The study fails to agree with Herzallah, Gutherrez and Rosas, (2016), that quality improvement is positively related to performance. Conversely, the study further notes that performance can only be achieved if costs are managed. The results agree with Goal Setting Theory that when dealing with a high goal, other extant strategies or new strategies can be discovered in order to attain the goal, (Latham, Seijts & Slocum, 2016).

The third hypothesis that was tested by this study is that mass market dominance strategy has no significant effect on performance of selected telecommunication application service firms in Kenya. Table 10 show a p-value $0.081 > 0.05$ for mass market dominance strategy. Therefore the study did not reject the null hypothesis and concluded that mass market dominance strategy does not significantly affect performance of selected telecommunication application service firms in Kenya. The results agree with Velu, (2015) that mass market dominance strategy may be insignificant to performance if adopted as an adaptive strategy. The study fails to agree with Abel, (2008) and Wang *et al*, (2016) study that mass market dominance strategy is significant to firm performance.

The fourth hypothesis tested was the null hypothesis that niche market penetration strategy has no significant effect on performance of selected telecommunication application service firms in Kenya. Results in Table 10 show p-value of $0.000 < 0.05$ meaning that the study rejected the null hypothesis concluding that niche market penetration strategy significantly affects performance of selected telecommunication application service firms. The results agree with the findings of Ottosson and Kindström, (2015) who argued that when niche market penetration strategy is adopted proactively through setting business goals that relate to expansion and growth, customer relationships and profit margins, organisational performance is

enhanced. Similarly, Toften *et al.*, (2010) found that specialisation, differentiated products, strong relationships and limited targeted support niche marketing strategy assumptions which ultimately improves firm performance. The results support the Goal Setting Theory that when a firm sets goals that specific and challenging then there is high performance, contending that a firm adopting niche market penetration strategy should be specific on the target market and thus can realise increased performance, (Latham, Seijts & Slocum, 2016).

Regression Analysis and Hypotheses on the Mediating Relationship

To test the mediator, entrepreneurial orientation effect on first mover strategy and performance of selected telecommunication application service firms in Kenya, adopted the four steps as suggested by Baron and Kenny (1986). Testing for mediation required determining whether first mover strategy as the independent variable is significantly affects performance of application service firms as the first step. The next two steps are done to determine if there is a relationship existing among the variables with mediation not likely if the relationship is non-significant in one or more of the conditions.

Table 11: Summary of Mediation Test

Step	Model	Result	Conclusion
1	$Y = 3.157 + 0.003X + \epsilon$	$P < 0.05$	Significant
2	$Me = 2.94 + 0.003X + \epsilon$	$p < 0.05$	Significant
3	$Y = 1.678 + 0.639Me + \epsilon$	$p < 0.05$	Significant
4	$Y = 1.943 + 0.002X + 0.413Me + \epsilon$	$p < 0.05$	Significant

Table 11 shows that the effect of first mover strategy on the performance of selected telecommunication application service firms in Kenya remained significant even after introduction of mediating variable of entrepreneurial orientation. From this result, the study did not accept the null hypothesis that entrepreneurial orientation has no significant mediating effect on between first mover strategy and performance of selected telecommunication application service firms in Kenya. The study concludes that entrepreneurial orientation partially mediated the relationship between first mover strategy and performance of selected telecommunication application service firms in Kenya.

CONCLUSION

The objective of the study was to investigate the effect of the first mover strategy on performance of selected telecommunication application service firms. Results from inferential

analysis reveal that the indicators of first mover strategy, barrier to entry strategy, quality improvement strategy and niche market penetration strategy are significant and positively affect performance of selected telecommunication application. Consequently, the study failed to accept the null hypotheses and concluded barrier to entry strategy, quality improvement strategy and niche market penetration strategy have a significant effect on performance of selected telecommunication application service firms in Kenya. Conversely, statistical analysis revealed mass market dominance strategy has no significant effect on performance and therefore failed to reject the null hypothesis. In addition, the study concludes EO partially mediates the relationship between first mover strategy and performance of selected telecommunication application service firms.

RECOMMENDATIONS

As the nature of global competition undergoes rapid change and more firms work towards investing in the telecommunication application service firms sector, it is incumbent that firms within this sector adopt and leverage on first mover strategy to gain competitive advantage in order to improve performance. In addition, governments should consider policy that protect telecommunication application service firms in Kenya. Similarly, develop policy on continuous quantity improvement and protection of telecommunication infrastructure. The study contributes to the body of knowledge by contributing to theory by introducing a conceptual framework on first mover strategy and performance. The study was focused on barrier to entry strategy, quality improvement strategy and niche market penetration as indicators for first mover strategy, however, there could be other strategies not examined. Therefore, the researcher recommends other studies that consider other first mover strategies that can affect performance. The study examined the mediating effect of entrepreneurial orientation, however there could be other variables that mediate the relationship between first mover strategy and performance of selected telecommunication application service

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