

Strategic Factors Affecting Sustainability of Fiber To The Home (FTTH): Case of Safaricom, Kenya

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Abstract- This study assessed the strategic factors affecting the sustainability of fiber to the home (FTTH), a case of Safaricom Limited, Kenya. FTTH is an access network architecture that extends from telecommunication operator's central office to the customer's premises using the optical fiber connection path terminated in the home to provide communication services. FTTH is a high-speed connectivity and used to provide various services to the customer including but not limited to internet, video on demand, television, voice and security services. The telecommunication operators, however, face various challenges in the provision of FTTH. The service is expensive to deploy and operate. There was, therefore, need to reach many customers and sustain their subscription to the service. It is thus necessary to study the factors that affect the sustainability of the FTTH service. The factors that affect the sustainability of FTTH as conceptualized in this study were partnerships, brand, technological innovations and pricing (independent variables). This study was based on two theoretical foundations namely: Christensen and Raynor's Theory of the Innovator's Solution and; the Theory of the Firm. The study sampled 92 individuals from a total target population 120 using stratified random sampling. Data was collected through the use of structured questionnaires. Descriptive statistics (frequencies, percentages and weighted means) and; inferential statistics (Multiple Regression Analysis and Pearson Correlation) were carried out. The findings obtained show that partnerships enhance service delivery as companies that enter into partnerships bring together their resources such as human, financial and material resources. Regarding brand strategy, it is evident that in most cases, companies that have known brands tend to attract more customers. Furthermore, superior brands tend to lock-in customers as the opportunity cost associated with moving to other companies is usually high. Technological innovations also play key roles in enhancing the sustainability of FTTH service. Evidently, competition in the telecommunications sector meant that businesses had to be at the forefront of technological innovation. Since superior products were always being formulated, the service constantly innovated and improved its services so as to retain their clients. On their part, pricing strategies play a central role in attracting customers. In this regard, Safaricom's FTTH service had attractive prices. Prices were constantly to match those offered by other companies, an aspect of price differentiation. This made it possible to attract more customers to the service resulting in enhanced sustainability of the service since a big customer base is

correlated with sustainability of a service. The following recommendations are made. Regarding partnership strategies, FTTH services should endeavor to have strong partnerships so as to enhance their ability to secure expertise and share resources and reduce operation costs. On brand strategy, Safaricom's FTTH services should endeavor to extend to as many parts of the country as possible and to make the brand known so as to attract and lock-in more customers in the wake of intense competition in the internet service provision industry. Technological innovations should be enhanced. As such, it was necessary for Safaricom to constantly innovate and improve their services so as to retain their client. Regarding pricing strategy, Safaricom's FTTH service should have attractive prices. Constant market surveys should be undertaken so as to constantly adjust the prices of the service to the prices offered by other companies, an aspect of price differentiation. Lastly, the study recommends studies targeting other companies should also be carried out as FTTH services continue increasing in the market. This is vital since the information garnered can help strategic managers learn how to best deal with emergent sustainability challenges in offering these services across a wide range of telecommunications companies.

Index Terms- Nairobi City County, Competitive edge, media strategies

I. BACKGROUND OF THE STUDY

Fiber to the home (FTTH) is a fiber optic communications path that extends from an operator's switching equipment to at least the boundary of a home living space or business office space (Communities, 2015) In this form of internet service; homes are connected directly to the fiber optic from a central point. The premises that have with this type of internet service enjoy unprecedented access to high-speed internet, (Awasthi & Bhaduria, 2014). Due to its high-speed internet connectivity, FTTH offers far more bandwidth, reliability, flexibility, security and longer economic life than alternative technologies, even though its price is comparable, (Communities, 2015)

The rise of the use of optic fiber in the provision of internet access is driven by the demand for high-speed internet. As companies and individuals started demanding high-speed internet, telecommunication operators began looking for avenues for delivering broadband internet services. The need for high bandwidth of information forced telecom operators to renew

copper-based access networks frequently but this was unsustainable hence these companies considered high volume roll-out of the current access networks that based on optical fiber, (Smith, 2006). This demand for high-speed communication path led to the deployment of fiber in or closer home.

Since its inception, FTTH has proven to be an ideal choice of providing the internet because of its broadband capacity. Chardy (2012), points out that if clients are served entirely by the optic-fiber, it is possible to increase the bandwidth in the future. As such, FTTH is a long-term solution to the internet speed and connectivity challenges facing internet service providers. It is also a solution that can last for many years for providing broadband services such as HD TV, VoIP, Online Gaming and, Video in Demand among others.

Kenya's telecoms operator Safaricom is an adept provider of FTTH services. Safaricom has 3,236 km fiber network which serves more than 15000 Homes, (Safaricom Ltd, 2016). In 2016, Safaricom signed a Memorandum of Understanding (MoU) with Kenya Power for the launch of a 12-month fiber-optic pilot project aimed at having at least 12,000 homes in Nairobi connected to the FTTH, (Telegeography, 2016). This partnership meant that Safaricom would lease Kenya Power's fiber infrastructure to provide households with last mile internet connections. The state-run Kenya Power had fiber infrastructure that stretches over 4,000 Km and its use would provide Kenyans with faster, reliable and affordable broadband services. The partnership with Kenya Power was hoped to augment this figure to more than 1 billion shillings by the end of 2017.

However, the provision of FTTH service is not without challenges. The service is expensive to run, (Chardy, 2012) and failure to reach anticipated customers would lead to loss to the millions of shillings invested in rolling out the service. The main challenges of deploying FTTH to be Cash flow management, recruiting qualified personnel, scaling the operation of a new network, expanding to new locations or new network topologies and regulatory barriers, (Whitman, 2007). These challenges if not addressed render the service unsustainable. Therefore, and as conceptualized in this study, companies should continually examine the factors that affect the sustainability of the FTTH service. Failure to do this the service may be rendered unsustainable to high initial cost and a high cost of running underutilized installations.

This current study conceptualizes that the deployment and sustainability of fiber to the Safaricom's FTTH service is affected by partnerships, brand recognition, technological innovations, and pricing. It is hypothesized that the joint effect of these factors determines the level to which the FTTH service is sustainable in the Kenyan market. However, minimal studies have been documented in Kenya for this relationship hence the need for this current study.

Fiber to the Home on a Global Perspective

The European Union has seen immense strides in the provision of broadband access to the Internet (Blackman & Srivastava, 2011). The continent has seen extensive fiber optic internet connectivity, usually through state funding. Starting in 2009, the EU issues the guidelines in which billions of Euros were to be used in giving access to high-speed broadband networks and the services to EU citizens and companies

In New Zealand and Australia, Gómez-Barroso and Feijão (2012), posit that fiber optic internet has increasingly become available to citizens. The come about following massive privatization and established of publicly owned companies tasked with building fiber networks that reach local areas. As a result, the two countries have total turn-around after these efforts.

In Japan, Biggs and Kelly (2006) point out that increase in demand for cheap internet had pushed public and private companies to invest highly in local IP networks and fiber-optic access networks. In the last decade, several Japanese have chosen FTTH in the bid to increase the reliability of voice, video, and data as a speed of internet connectivity is over 100mbit/s in the fiber to the home network.

Fiber to the Home on a Regional Perspective

According to Mulas (2012), broadband is growing faster in the developing world, including Africa, with a compound average growth rate of over 200% since 2009 as compared. However, ITU (2012b) reports that fixed broadband penetration in Africa remained very low with an estimated penetration of only 0.2% by the end of 2011 which shows that is still a substantial untapped FTTH market in the continent.

Kim, Kelly, and Raja (2010) point out that in developing countries; the broadband internet is linked to economic growth. In this regard, for every 10% increase in broadband penetration, there would be a 1.38% increase in the economic growth. This situation has pushed countries in the region to increasingly adopt FTTH services in the bid to spur economic growth and increase employment opportunities for their citizens.

In corroboration with the findings of Kim et al. (2010), Katz (2012) asserts that increasing broadband services penetration in African counties by 1% could contribute an additional 0.0158% to the GDP growth. These findings have driven many African countries to partner with development partners as well as international telecommunication companies to enhance the access to the broadband internet through FTTH services among others.

Stork, Calandro, and Gamage (2014) point out that in South Africa, accessibility to FTTH as well as other broadband services has grown extensively. In the last decade, the country has remained in the top 100 countries that use broadband internet globally. This finding shows that there is a positive reception of FTTH in African countries.

Fiber to the Home on Local Perspective

Optic fiber has increasingly taken center stage in Kenya. According to Ochola (2013), the arrival of three fiber-optic international submarine cables namely SEACOM, EASSY, and TEAMS in 2009 and 2010 open doors for broadband communication in Kenya. The landing of the undersea cables ended the dependency on limited and expensive satellite bandwidth in the country.

Wakukha (2011) is of the view that internet users in Kenya have increased immensely since 2011. Out of the more than estimated 10.2 million in 2011, an increasingly significant number has increased due to the emergence of the fiber optic network which offers fast internet connections. According to Stork et al. (2012), internet connections to Kenya are still low. As at 2011, these stood at 12.7% in 2011.

The Kenya Power Fibre Optic Network (Kenya Power, 2017) has had a Network Facility Provider license from the Communications Commission of Kenya (CCK). The optic fiber by the firm dubbed "U-Telco" is aimed at increasing the ability of the country to meet the increasing bandwidth demand for voice, data, and video. Safaricom limited, Jamii telecommunications limited, Wananchi group through Zuku and Telkom Kenya are companies currently offering FTTH services in Kenya. As such, a lot of effort is being made to increase the accessibility of internet in the country.

II. STATEMENT OF THE PROBLEM

FTTH as an internet installation gives promises unprecedented access to high-speed internet, (Awasthi & Bhadauria, 2014). Due to the high-speed internet connectivity promised by the FTTH service, its popularity has been on the rise the world over. But its provision is not without challenges. The service is expensive to run, (Chardy, 2012) and failure to reach anticipated customers would lead to loss to the millions of shillings invested in rolling out the service. It is this necessary to study the factors that affect the sustainability of the FTTH service.

Various studies such as Gubbins (2015), have attempted to study the effect of partnerships on the sustainability of projects. However, none of these studies focus on Safaricom's FTTH project. The study of Arslan and Altuna (2010), shows how branding affects the sustainability of a service or product but

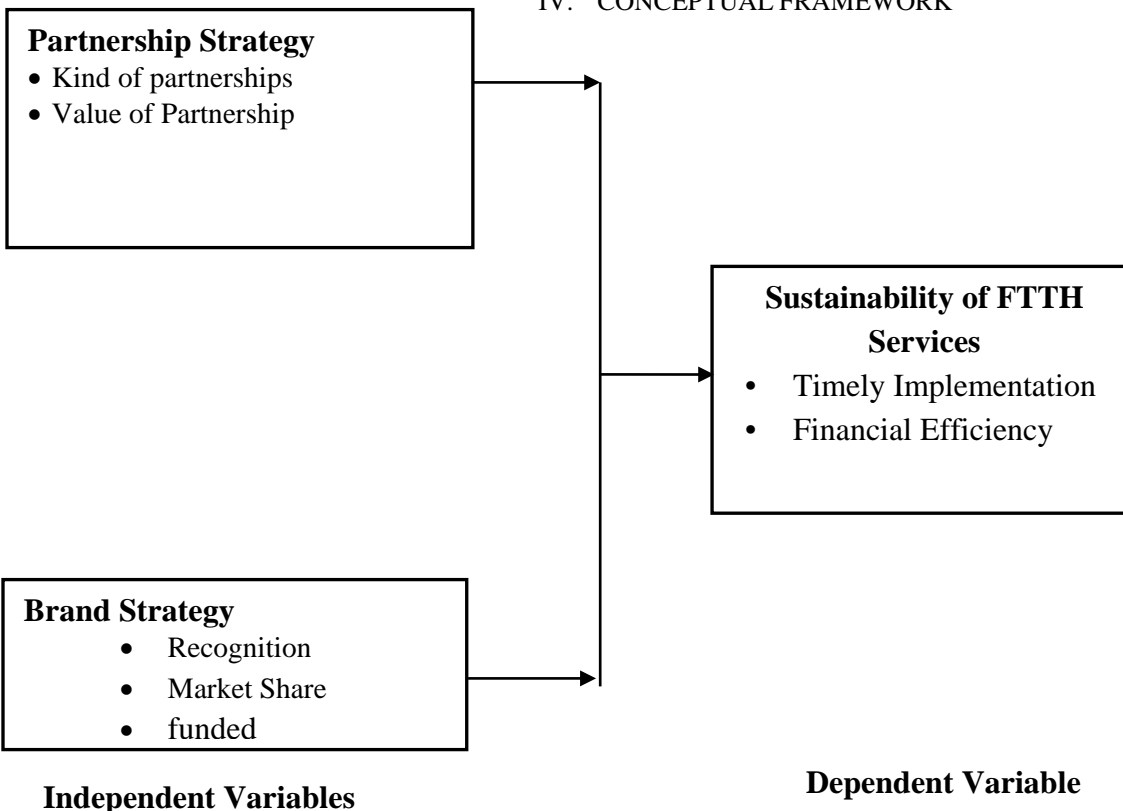
does not focus on Kenya or an African country for that matter. Regarding technological innovations, various studies were reviewed. These include studies such as Rubera and Kirca (2012), but none of these studies focused on Kenya or an African country. The findings obtained may thus not relate to innovations in the FTTH in Kenya. Pricing is also an important factor affecting the sustainability of projects the world over. Various studies, such as Mula (2014) and Mokaya et al. (2012), show that affordable prices enhance the sustainability of a service. The main challenges of deploying FTTH to be Cash flow management, recruiting qualified personnel, scaling the operation of a new network, expanding to new locations or new network topologies and regulatory barriers, (Whitman, 2007). These challenges if not addressed render the service unsustainable

III. SPECIFIC OBJECTIVES

The specific objectives of the study were:

- 1) To assess how partnership strategy affect sustainability of fiber to the home (FTTH)
- 2) To determine how brand strategy affect sustainability of Fiber to the home (FTTH)

IV. CONCEPTUAL FRAMEWORK



V. RESEARCH METHODOLOGY

This chapter presents the research method used in this study. It contains sections on the sample, sampling techniques, data collection instruments, data analysis and methods of presenting the findings obtained.

Research Design

Kothari (2009) is the view that a research design is the arrangement of conditions for collection and analysis of data. This is done in such a way that the procedure has relevance to the research purpose and is economical. This study used the descriptive survey design. Descriptive surveys are used to describe the relationship between the variables under investigation in a study (Best & Kahn, 1989). The essence of this design is that it shows the study subject on "as it is" basis. As such, and in assessing the strategic factors affecting the sustainability of fiber to the home (FTTH), it was identified as a suitable design. This is more so because it shows the relationship between 'strategic factors' and 'sustainability' of Safaricom's FTTH service.

The Target Population

The population of a study is an amalgamation of the entire groups of individuals or objects which possess common characteristics within a particular space and at a specific period (Mugenda & Mugenda, 2003). This study targeted employees of Safaricom Limited working at the headquarters in Nairobi City County. The choice of Safaricom Limited is informed by the fact that it's the leading telecommunication sector, with an extensive FTTH service. However, no documented study has attempted to unearth the strategic factors affecting the sustainability of FTTH services in Kenya. The population for this study comprised of managerial and middle-level staff drawn from 6 departments of Safaricom namely: the Strategy and Innovation; Technical and IT; Regional Sales and Operations; Customer Operations; Consumer Business Unit and; Corporate Affairs. Herein, 20 employees per department (4 managerial and 16 middle-level staff) were targeted. This made the total target population 120. Employees from these departments Sampling Frame
A sampling frame is a list of all items as well as individuals from a population who can be sampled in a particular study (Best & Kahn, 1989). The sampling frame for this study consisted of the managerial and middle-level staff drawn from the departments of Strategy and Innovation; Technical and IT; Regional Sales and Operations; Customer Operations; Consumer Business Unit and; Corporate Affairs.

Table 3.1: Sampling Frame

Department	Managerial Staff	Middle-Level Staff	Total
Strategy and Innovation	4	16	20
Technical and IT	4	16	20
Regional Sales & Operations	4	16	20
Customer Operations	4	16	20

Consumer Business Unit	4	16	20
Corporate Affairs	4	16	20
Total	24	96	120

Sample and Sampling Techniques

Sampling is the process through which some individuals that contains the elements representative of the entire group is selected from a population (Mugenda & Mugenda, 2003). In most cases, studies are carried out on samples. There are numerous sampling techniques. A sampling technique regards the specific process by which a sample is selected (Cooper & Schindler, 2013). This study used stratified random sampling. In this form of sampling, the study population is divided into homogeneous groups (strata). After that, samples are obtained from each stratum (Best & Kahn, 1989). In this study, the stratum included directors and departmental heads.

The study used the simplified formula that designed by Yamane (1967) and expounded by Cooper and Schindler (2013) to calculate sample size from each stratum. The formula employed is:

$$n = N / (1 + N(e)^2)$$

Where:

n = sample size,

N = population size and

e = the level of precision (0.05).

As such, the 92 individuals were sampled in this study.

Table 3.2: Sample Size

Department	Target Population (N)	Sample (n=N/(1+N(e) ²))
Managerial Staff	24	18
Middle-Level Staff	96	74
Total*	120	92

* Formula applies to the total formula. The strata sample sizes are proportionately allocated from the derived total

Data Collection Instruments

According to Cooper and Schindler (2003), data collection tools are generic structured forms used for collecting and analyzing data. Data was gathered through the use of structured questionnaires. The questionnaire was chosen for this study because it is practical as it assures the data collection from a large number of people within a short time in a relatively cost-effective manner, and is free from the bias of the interviewer (Kothari, 2004). The questionnaire was based on the study objectives. Herein, questions were formulated based on these objectives. A section was included in the questionnaire on general information, each of the four independent variables and one section for the dependent variable. The questionnaires contained closed-ended questions.

Data Collection Procedure

The first step that the researcher took to collect the data was to obtain a research permit from the National Commission for Science, Technology and Innovation (NACOSTI) located in Nairobi. Furthermore, the researcher got an introductory letter from Jomo Kenyatta University of Agriculture and Technology to help in collecting data. The researcher then visited Safaricom headquarters and issued the questionnaires to the respondents and received them back after two working weeks.

Pilot Testing

Cooper and Schindler (2011) point out that a pilot test is conducted to detect weaknesses in design and instrumentation and to provide proxy data for selection of a probability sample. The questionnaire was tested to ascertain validity and reliability. The researcher undertook a pilot of 12 individuals drawn from the departments under investigation in Safaricom. The persons selected for the pilot study did not take part in the final study. The population of 12 was guided by Kasomo (2007) who postulated that 10% of the target population is sufficient for *pre-testing* of questionnaires in descriptive studies. As such, the formula for arriving at the pilot study sample was as follows:

$$n_p = N * 10\%$$

$$n_p = 120 * 10$$

$$n_p = 12$$

Where:

N = target population

n_p = Pilot study sample

Validity of the Research Instrument

Validity is the degree to which a test or an instrument measures what it is supposed to measure (Mugenda & Mugenda, 2003). Validity is vital since it enhances appropriate interpretation of the attitudes and opinions of the respondent. In this study, data collected from the pilot test was used to test the validity of the research instrument. In this regard, the instrument checked for accuracy, clarity and suitability. The ability of the respondents to answer the study questions with without problems was also assessed and improvements made on the research instrument. Also, the instruments were presented to the supervisors for their expert advice. Their input was used to enhance the questionnaire further.

Reliability of the Research Instrument

According to Mugenda and Mugenda (2003), reliability is used to measure the degree to which a research instrument yields consistent results after repeated trials. The data obtained from the pilot study was tested using Cronbach's alpha to gauge its reliability. The Cronbach's alpha is a reliability coefficient that measures the degree of internal consistency/homogeneity between variables measuring the same construct. In this test, a value of 0.6 or less indicates poor internal consistency reliability while acceptable reliability estimates range from .70 to .80 (Malhotra, 2004).

Data Analysis and Presentation

Data Analysis

The data collected was entered and verified after coding. After that, it was examined concerning the objectives of the study. Several statistical tests were undertaken using the Statistical Package for the Social Sciences (SPSS) version 24. These included descriptive statistics such as frequencies, percentages and weighted means and; inferential statistics such as Multiple Regression Analysis and Pearson Correlation).

The following regression model that was adopted by the study:

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

Where: Y = Implementation of Sustainability of FTTH

$\beta_0, \beta_1, \beta_2, \beta_3,$ and β_4 = Sustainability of FTTH

X_1 = Partnerships

X_2 = Brand

X_3 = Technological Innovation

X_4 = Pricing

ε = Error term

On its part, data from open-ended questions were analyzed thematically in line with the study objectives. The emergent significance of the findings obtained in line with the study objectives was assessed. Thereafter discussions were then made against the literature reviewed.

Data Presentation

The results obtained were presented in tables, charts and graphs. These were used since they summarize and display information in a manner that is easy to understand and analyze (Kothari, 2004). After that, the findings obtained were discussed against the literature reviewed and appropriate conclusions made.

VI. RESEARCH FINDINGS AND DISCUSSION

In this chapter, the findings of the study are presented. Data was collected from managerial and middle-level staff drawn from the departments of Strategy and Innovation; Technical and IT; Regional Sales and Operations; Customer Operations; Consumer Business Unit and; Corporate Affairs of Safaricom Limited. Herein, 92 individuals had been sampled using stratified random sampling.

Response Rate

From the 92 questionnaires issued to the respondents, 88 were handed back reflect a response rate of 95.7% which was deemed sufficient for data analysis.

Results of the Pilot Study

Before administration, the questionnaire was pretested through a pilot study targeting 12 individuals drawn from the departments under investigation in Safaricom. The persons selected for the pilot study did not participate in the final study. The population of 12 was guided by Kasomo (2007) who postulated that 10% of the target population is sufficient for pre-testing of questionnaires in descriptive studies.

On its part, the validity of the questionnaire was assessed by finding out the ability of respondents to answer the questionnaire with ease. The findings obtained show that the

respondents were able to respond to the study questions presented to them without any difficulties. As such, the questionnaire was deemed fit for use in data collection. Conversely, Cronbach's alphas was used in testing the reliability of the research instrument. The findings obtained are presented in Table 4.1

Table 4.1: Reliability Statistics

Variable	Cronbach's Alpha
Partnership Strategy	0.773
Brand Strategy	0.831
Technological Innovation	0.815
Pricing Strategy	0.912
Sustainability of FTTH Services	0.812

For the five variables, the coefficients obtained ranged from 0.773 to 0.912. According to Malhotra (2004), coefficients ranging between 0.7 and 0.8 are considered acceptable; those

ranging between 0.8 and 0.9 good and; those greater than 0.9 excellent. Owing to the high values of the coefficients obtained in this study, the questionnaire was deemed reliable for use in data collection.

General Information of the Respondents

General information about the work position of the respondents was investigated. The findings obtained show that all the departments were well represented. The majority of the respondents (19.3%) came from the Strategy and Innovation department. These were followed by those from Customer Operations and Consumer Business Unit departments each at 17%. The next was from the Technical and IT and, Regional Sales and Operations departments each at 15.9%. The least were those from the Corporate Affairs department (14.8%). From these findings, it is evident that all the divisions were represented sufficiently in the study. This representation reduced bias since the views of employees from various departments were obtained. The findings obtained are presented in Figure 4.1.

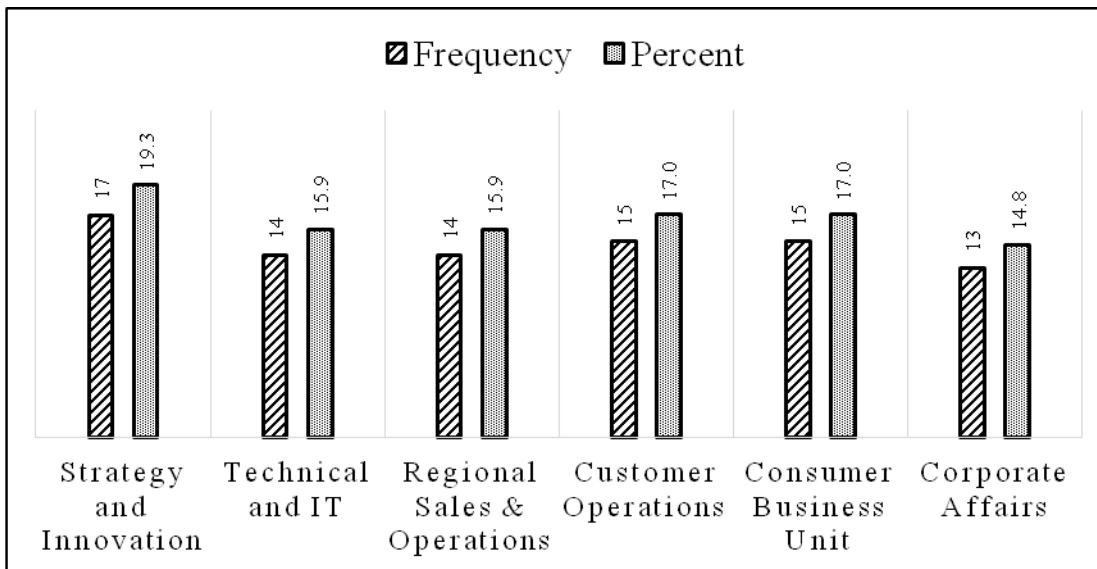


Figure 4.1: Distribution by Work Position

Descriptive Statistics

The researcher posed numerous Likert-type statements to the respondents. These were in line with study variables. The responses were captured on a scale of 5 to 1 where: 5=to a very great extent; 4=to a great extent; 3= to a moderate extent; 2=to a limited extent and; 1=Not at all. After that, the weighted means obtained were used to show the central tendency (average attitude of the respondents) on the statements presented to them. In the end, the findings were analyzed against the reviewed literature.

Partnership Strategy

The study aimed at assessing how partnership strategy affects the sustainability of fiber to the home (FTTH). Data was

captured in 5 Likert-type questions as well as an open-ended question.

Findings from Likert-Type Questions

Table 4.2 below presents the data collected from the five Likert-type scale statements. The findings in Table 4.2 show that weighted means ranging from 4.61 to 4.88 were obtained showing the respondents tended to agree with statements presented to them to a very great extent. As such, it is apparent that partnerships are indispensable since they enhance the success of FTTH services through sharing resources and expertise. This finding agrees with Cetindamar et al. (2010) who argue that partnerships help in sharing and recruiting experts, carrying out collaborative development with partners and in

some instances purchasing the businesses that have rights to exploit the technology.

The findings also show that partnerships enable collaborative arrangement that affects the sustainability of FTTH projects, also in corroboration of the findings of Cetindamar et al. (2010). It was also agreed to a very great extent that partnerships enhance innovativeness in ventures such as internet provision where various actors bring their strengths to reach new markets better and; that Safaricom can achieve more by involving industry partners to support the internal development of FTTH

outreach capabilities. The finding agrees with Gubbins (2015) who argues that increased customer reach through the resultant agency networks in partnerships increases the accessibility of the services of such partners in the industry.

Lastly, the findings show that FTTH services help in developing tailor-made solutions and that this reduces costs and risks. It can thus be deduced that partnerships enhance better reach to customers through superior services, therefore, enhancing the sustainability of a service.

Table 4.2: Agreement to statement on effect of Partnership Strategy on sustainability of FTTH Services

Measurement statement	N	Weighted Mean	Std. Dev.
Partnerships are indispensable since they enhance the success of FTTH services through sharing resources and expertise	88	4.88	0.33
Partnerships enable collaborative arrangement that affects sustainability of FTTH projects	88	4.82	0.39
Partnerships enhance innovativeness in ventures such as internet provision where various actors bring their strengths to reach new markets better	88	4.80	0.43
Safaricom can achieve more by involving industry partners to support the internal development of FTTH outreach capabilities	88	4.68	0.69
Partnership in the FTTH services helps in developing tailor-made solutions and reduces costs and risks	88	4.61	0.83
Average Weighted Mean		4.76	

Findings from Open-Ended Question

The respondents were presented with the question: *In which other ways do partnership strategies enhance the sustainability of FTTH services?* The findings obtained show that partnerships enhance service delivery as companies that enter into partnerships bring together their resources, as argued by Gubbins (2015). In this accord, various human, financial and material resources are brought together to enhance the provision of services. Moreover, expertise is easily outsourced, and this enhances the sustainability of the FTTH service as elicited by Pattberg et al. (2012).

Brand Strategy

The study aimed at assessing how brand strategies affect the sustainability of fiber to the home (FTTH). Data was captured in 5 Likert-type questions as well as an open-ended question.

Findings from Likert-Type Questions

Table 4.3 below represents data collected from the five Likert-type scale statements. The weighted means of the data

obtained ranged between 4.74 and 5.00. The survey showed general tendency to agree to the statements to a very great extent. In this regard, it was made manifest that a recognizable FTTH brand which fulfills the needs of customers is likely to beat its competitors in the market, and this can enhance its position in the market for long periods of time. This finding agrees with Arslan and Altuna (2010) who argues that brands that have high awareness are characterized by high customer loyalty, high-profit margins and an increased competitive edge among others.

Furthermore, brands that are recognizable have a competitive advantage over brands that are less known in the market and that Safaricom’s FTTH brand recognition enhances its sustainability in the Kenyan market. These findings are in line with Petter (2009) who argues that recognized brands can easily position themselves in new markets and that once known brands overcome market challenges, and they gain a capacity that is hard to overcome by new entrants in the market. The brand recognition gives them long-term sustainability as newer entrants try to overcome bottlenecks in the market (Petter, 2009). Lastly, the findings obtained show (agreement to a very high extent) that Safaricom’s FTTH brand has high awareness and is characterized

by high customer loyalty and that; Safaricom’s FTTH brand has high awareness, many customers and high-profit margins (Arslan & Altuna, 2010).

Table 4.3: Agreements to statement on the effect of Brand Strategy on sustainability of FTTH services

Measurement Statement	N	Weighted Mean	Std. Dev.
A recognizable FTTH brand which fulfills the needs of customers is likely to beat its competitors in the market, and this can enhance its position in the market for long periods of time	88	5.00	0.00
Brands that are recognizable have a competitive advantage over brands that are less known in the market	88	4.94	0.23
Safaricom’s FTTH brand recognition enhances its sustainability in the Kenyan market.	88	4.99	0.11
Safaricom’s FTTH brand has high awareness and is characterized by high customer loyalty	88	4.85	0.39
Safaricom's FTTH brand has high awareness, many customers, and high-profit margins	88	4.74	0.49
Average Weighted Mean		4.90	

Findings from Open-Ended Question

Furthermore, the respondents were presented with the question: *In which other ways does brand strategy enhance the sustainability of FTTH services?* The findings obtained show that in most cases, companies that have known brands tend to attract more customers, a finding that is in line with Lee (2008) who is of the view that recognized brands tend to have large customer bases.

Furthermore, preferred brands tend to lock-in customers like the opportunity cost associated with moving to other companies is usually high. As such, Safaricom's FTTH services should endeavor to extend to as many parts of the country as possible and to make the brand known to attract and lock-in more customers in the wake of intense competition in the internet service provision industry.

VII. CONCLUSION

Based on the study findings, various conclusions can be made. The findings obtained show that partnerships enhance service delivery as companies that enter into partnerships bring together their resources. In this accord, various human, financial and material resources are brought together to strengthen the provision of services. Moreover, expertise is easily outsourced, and this enhances the sustainability of the FTTH service. Regarding brand strategy, it is evident that in most cases, companies that have known brands tend to attract more customers. Furthermore, preferred brands tend to lock-in customers like the opportunity cost associated with moving to other companies is usually high.

VIII. RECOMMENDATIONS

The following recommendations, which are based on the study findings, are made. The recommendations were presented in line with the study variables.

Partnership Strategy

Regarding partnership strategies, FTTH services should endeavor to have strong partnerships to enhance their ability to secure expertise and share resources. This is vital since it can reduce operation costs, making the service sustainable. Constant review of the existent partnerships should be done so that new partners could be attracted to strengthen the provision of FTTH services.

Brand Strategy

On brand strategy, it is evident that in most cases, companies that have known brands tend to attract more customers. As such, Safaricom’s FTTH services should endeavor to extend to as many parts of the country as possible and to make the brand known so as to attract and lock-in more customers in the wake of intense competition in the internet service provision industry.

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