Relationship Between Availability and Bottom of the Pyramid Market Performance among the Fast Moving Consumers' Goods Companies in Kenya

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Abstract
In this study, we examine availability as one of the four strategies employed by FMCG firms at the bottom of the pyramid through a cross-sectional survey of FMCGs firms in Nairobi Kenya using mixed methods research. We test the influence of availability on performance measured by market share and profitability of the firms and further test the effect of taxation on this relationship. A significant relationship exists between availability strategies and performance and taxation negatively moderates the relationship between availability and performance of the firms. We conclude that availability strategies are crucial for the success of firms at the BOP and that taxation can discourage investment in this segment. Besides clarifying the relationship between availability attributes and indicators (sales growth and market share), these findings have implication for policy on taxation and management practice regarding prioritization of emphasis on the various availability strategies (measured through product access and use channels) that organizations can choose from.

Keywords: Availability, BOP, Market Share, Stock outs

1.0 Introduction
Availability is the extent to which customers acquire and use a product; it is the extent to which a customer is able to access and use a product. If the customer is able to access a product at the nearest location where she/he needs its availability is good and vice versa. This is achieved through the distribution of the product to the final consumer. It is the extent to which customers are able to readily acquire and use a product (Anderson & Markides, 2006). According to Bikam (2013), distribution channels are methods of getting products to its consumers. It is a process of making a product available for consumption by a consumer using direct means or using indirect means with intermediaries. Distribution channels at BOP are fragmented or sometimes non-existent and getting the product to people can be a major hurdle to overcome and therefore strategies on distribution need to be devised to mitigate this challenge (Vachani & Smith, 2008).

The distribution of fast moving consumer goods is a major challenge affecting the realization of increased sales revenue and therefore companies must continue developing innovative distribution strategies which can improve their sales (Nyaga, 2014).Though FMCG firms endeavour to make their products readily accessible and usable by customers, government plays a role by instituting regulatory as well as fiscal measures including taxation; for example, a 16% value added tax (VAT) is charged on most consumer goods and services in Kenya.

Some of the availability strategies implemented by FMCG firms involve distribution tools, distribution channels and filling distribution gaps (*stock out management)*. It is imperative for all firms to ensure that the use the most appropriate availability strategies in terms of efficiency and effectiveness in addressing the ever discerning customers. Consequently, it is of interest to examine the efficacy of availability strategy on the performance (sales volume and sales revenue) of firms at the bottom of the pyramid market. Specifically, *how do distribution tools, distribution channels and stock out management influence sales growth and market share of FMCG firms at the BOP market segment?*

2.0 Theory and Hypothesis

The purpose of the study was to examine the effect of availability strategies on the performance (sales volume and profitability) of FMCGs at the BOP Market. Based on empirical literature on the 4A and the BOP theorization (citation) and consistent with the purpose of this study we conceptualize the study as presented in Figure 1.
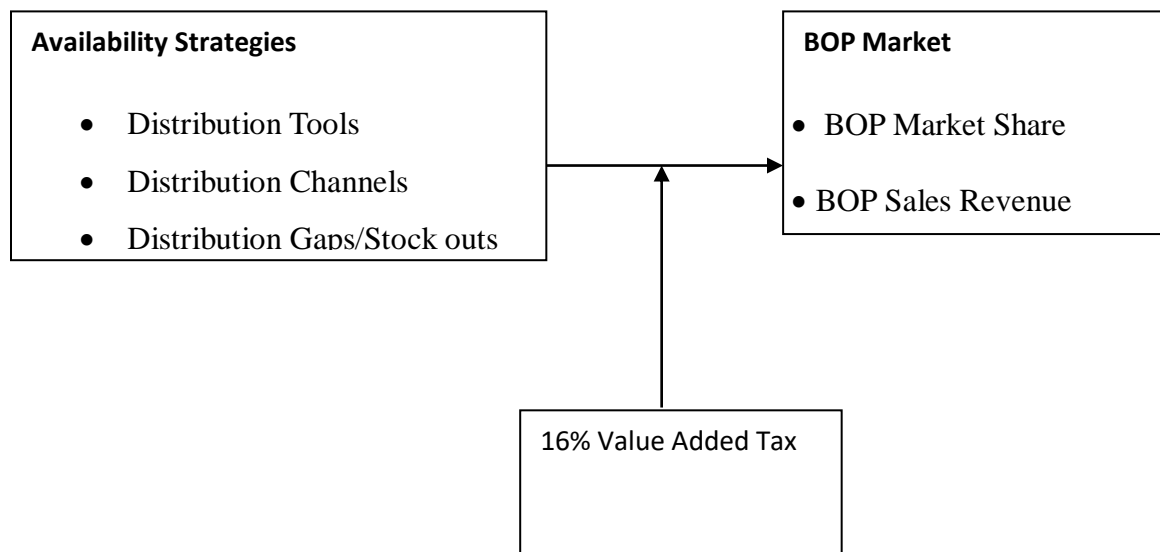

Figure 1. Research Model

We then hypothesize (H1) as follows:

H1: Availability strategies adopted by FMCGs firms positively and significantly influence their performance at the BOP market segment

Drawing from H1 we further hypothesize that

H1a: Distribution tools used by FMCGs firms positively and significantly influence their performance of at the BOP market segment

H1b: Distribution channels by FMCGs firms positively and significantly influence their performance of at the BOP market segment

H1c: Stock out management practices adopted by FMCGs firms positively and significantly influences their performance at the BOP market segment

Further, since government intervention influences how firms conduct their business and ultimately perform, we posit that taxation (the 16% Value Added Tax) negatively moderates the relationship between availability strategies adoption and performance of FMCGs at the BOP. This leads to the last hypothesis as follows:

H2: The 16% VAT has a significant negative influence on the relationship between availability strategy implementation and the performance (sales and market share) of FMCGs firms at the bottom of the pyramid market

3.0 Methodology
In this section we present the research design, population, data collection instruments and procedures; and data analysis techniques that were used in this study.

3.1 Research Design
This research used the survey design which is similar to that used by Angoitia and Ramirez (2009) in a similar study on strategic use of mobile telephony at the BOP. In keeping with the objective of this study, the effect of availability strategies on performance of FMCGs at the bottom of the pyramid market, cross-sectional survey research was appropriate as it was not possible to collect data from all the FMCGs companies operating in Nairobi, Kenya

3.2 Target Population
The target population comprised two categories namely, all the FMCGs companies in Kenya as listed by Kenya Association of Manufacturers directory of 2014 (KAM, 2014) and BOP consumers from the five informal dwellings (slums) of Nairobi county: Mathare, Sinai, Soweto, Kibera and Kwa-Njenga/ Pipeline. Chikweche and Fletcher (2012) used similar populations namely FMCGs firms dealing in foodstuff and personal hygiene products and BOP consumers in a related study in Zimbabwe. While the Sales and Marketing managers were the most suitable FMCGs respondents due to their knowledge of strategies used in addressing BOP consumer needs, the BOP consumers were well suited to provide information on the products they purchase

3.3 Sampling Frame
The sampling frame for FMCG companies was a list from the Kenya Association of Manufacturers (KAM) directory of 2014. It was, however difficult to obtain a sampling frame for BOP consumers and as stated by Zikmund et al. (2010) and Babbie (2010), where the sampling list does not exist then one can be prepared using the most appropriate data. In this study, a list was prepared using information availed by Tetra Pak International who are the market leaders in food packaging who carried out a retail audit on the total number of kiosks in Nairobi in the year 2012

3.4 Sampling Size and Sampling Techniques

A cross-sectional census survey (Table 1) of all the 130 fast moving consumer goods companies operating in Nairobi County was conducted.

Table 1: Fast Moving Consumer Goods-Across the Country

Region	Number of Firms
Nairobi Region	130
Other regions outside Nairobi	46
Total Number	**176**

Source: KAM Directory (2014)

Sampling Techniques. This study utilized cluster sampling and specifically area sampling and purposive sampling.

Purposive sampling was used to select Nairobi County because it is cosmopolitan and most FMCGs companies and BOP consumers are found in Nairobi County and being the capital city, it has representation from all other counties in Kenya.

According Zickmund (2010) purposive sampling is used where the researcher wishes to isolate a sample that has qualities or characteristics required for the study. Nairobi County having 74.7% of all the fast-moving consumers' companies in Kenya was therefore an appropriate setting for this study.

Fast moving consumer goods companies are scattered all over the country and as Mugenda and Mugenda (2003) stated, cluster sampling is used when the population is scattered over a large geographical area. For the BOP consumers, the sampling technique was multi-stage sampling which combined cluster sampling and purposive sampling where a small sample size with similar characteristics was used gave an objective representation of the population.

In this study, the BOP consumers' buying characteristics were similar since their limitation was the wage or disposable income which was normally paid daily and the consumer ought to have bought the basic goods which met their family daily requirement based on the money at their disposal. This is what is referred to as single serve purchase because the consumer only buys a basket of goods which are supposed to last for one day only. By selecting Nairobi County to represent the 47 counties in Kenya, purposive sampling was invoked. This sampling was also used to select the BOP consumers in Nairobi

In the second stage, the five major slums in Nairobi which represent the main urban BOP consumers were selected. These slums are Kibera, Sinai, Mathare, Kwanjenga/Pipeline and Soweto slums. Stage three involved preparation of the sampling frame which was used at random to select 150 respondents/BOP consumers who buy from the kiosks/shops in each of the five slums identified above. Purposive sampling gave the researcher the opportunity to pick a BOP consumer who bought goods from a specific kiosk/shop through the assistance of the owner of the business who identified the BOP consumer.

The kiosk/shop owners were requested to identify the BOP consumers and clarify to them the purpose of the study. This was to cultivate trust and enable the researcher to conduct the interview without suspicion from the BOP consumers. This is in line with Creswell (2009), who stated that the respondents are purposefully selected because they can inform an understanding of the research problem and central phenomenon in the study. Anderson and Billow (2007) and Ireland (2008) used the same technique to select the sample size and the sample in their studies on BOP research.

3.4 Data Collection Methods and Instruments
Two self-administered semi-structured questionnaires were used for data collection: one the Sales and Marketing managers in the FMCGs and the other for the BOP consumers. This approach is supported by Chikweche (2010) who noted that having more than one group of respondents is good in studies involving consumers and firms because they have a dyadic relationship.

3.5 Administration of Research Instruments
Sales and marketing managers are easy to identify and are key persons who develop the sales and marketing strategies for their companies. According to Yang (2008), the questions in a study should be directly related to the research objectives. In the development of the questionnaires, the variable, availability, was identified and operationally defined. The procedure for distributing the questionnaires to the respondents was through self-introduction; a self-introduction letter and an authority letter for data collection from the Jomo Kenyatta University accompanied the questionnaire.

3.6 Pilot Testing
Piloting of the questionnaire was done using the 15 sales managers from FMCGs companies and 15 BOP consumers from the five slums of Nairobi, namely, Kwanjenga, Mathare, Kibera, Sinai and Soweto. This was 10% of the total sample population and according to Babbie (2010), this is a good representation to test the reliability and validity of the research instruments. This helped the researcher to identify any ambiguous and unclear questions in the questionnaire before administering it to the selected population.

3.6.1 Reliability. Reliability test for the data collection instruments was done using the Cronbach's formula to measure the internal consistency of the instrument. According to Mugenda and Mugenda (2003) and Zimund et.al (2010) this is a better test of reliability and the higher the coefficient the better the results in terms of and a coefficient of 0.7 and above is considered a good measure of reliability.

3.6.2 Validity.
Validity was achieved during the pilot testing of the research instruments using the 15 Sales Managers from the FMCG sector. To ensure that the instrument produced valid data attention was taken while designing the questionnaire. The objective was to ensure that the questionnaires were measuring what was intended and collected what was intended to be collected. This is what is known as content validity and is normally improved through the use of an expert or a professional in a certain field (Mugenda & Mugenda, 2003).

4.0 Data Processing and Analysis

Descriptive statistics such as mode, median, mean, standard deviation were used to achieve the first objective of getting a feel for the data while the second objective of testing the goodness of data was achieved through test of reliability using the Cronbach's Coefficient alpha formula and finally, the third objective of hypothesis testing was achieved through multiple regression analysis.

Data was processed using the SPSS (Statistical data processing for Social Sciences) version 20 to obtain results using linear regression and correlation analysis models. The use of classic linear regression model is preferred due to its ability to show relationships between the independent and the dependent variables (Castillo, 2009). Multiple regression analysis and correlation analysis were carried out with the aim of analyzing the relationships between strategies used by FMCGs, availability strategy and bottom of the pyramid market performance. Martin and Hill (2012) used a similar model when they carried out a BOP research on life satisfaction, self-determination and consumption adequacy in 51 countries. Shafayet and Rozario (2012) used multivariate model in a similar study on purchase decisions regarding FMCGs companies in Bangladesh while Nguyen and Mohamed (2011) used multiple regression in their research on leadership behaviors.

Quantitative Analysis. The descriptive statistics were employed in the analysis of quantitative data in terms of frequency distribution tables, pie charts, mean and standard deviation on the strategies used by the FMCGs to respond to the bottom of the pyramid market. The study also utilized multiple regressions to determine the relationship between BOP strategies and the BOP market. The effect of the moderating variable was also tested using regression analysis. The t-test was carried out to test the hypotheses.

Multiple Regression Analysis. The multiple regression model for this study were as follows:

$Y = \beta_0 + \beta_1 X_1 + e$

Where

Y = BOP market share

β_0 = intercept

β = coefficient of regression

χ = Availability strategy

e = is the error term

Nguyen and Mohamed (2011) stated that multivariate regression allows prediction of a single dependent variable from more than one independent variable and also the determination of the influential dependent variable; linear regression with OLS was used to estimate the relationship between availability strategies employed and BOP performance among FMCG firms in Nairobi County, Kenya.

Moderated Multiple Regression Analysis. The government normally has a lot of influence on the strategies developed by the FMCGs especially on BOP consumption through taxation such as the value added tax (VAT) which was used as a moderator variable in this study. Specifically, the study utilized a Moderated Multiple Regression (MMR) model to test the moderating effect of 16% VAT tax on the bottom of the pyramid market. A variable Z is a moderator of the relationship between dependent variable (Y) and independent variables (X). Using a Moderated Multiple Regression to estimate, the effect of a moderator variable Z on the X-Y relationship involves a regression equation that involves y as a dependent and x and z as independent variables. The Moderated Multiple Regression (MMR) equation also included a third predictor consisting of the Z*X product. This product term carries information regarding the X*Z interaction which is the moderating effect of Z. Rejecting the null hypothesis (the coefficient of the product term), that $\beta_{iz} = 0$ indicates the presence of a moderating or interaction effect otherwise if $\beta_{iz} \neq 0$; in this study the coefficient associated with the interaction variable is (X*Z) is β_3. The Moderated Multiple Regression (MMR) model for Hypothesis Two was;

$$Y = \beta_o + \beta_1 X + \beta_2 Z + \beta_3 X*Z + e$$

Where: Y   =   Bottom of the Pyramid market share

       X   =   Availability Strategies

β_o =   constant or intercept

β_1 =   coefficients of X

β_2 =   coefficients of Z

β_3 =   coefficients of X*Z

       Z   =   moderating variable 16% VAT

       E   =   error term

X*Z   =   Interaction term of 16% VAT with Availability strategy (X)

Variable Definition and Measurement

In this study, variable measurements were based on a mix of tools because the questionnaire had both qualitative and quantitative measures and therefore the variables of study had different measurement levels, some with nominal, ordinal, interval and some with ratio scales According to Zikmund at al. (2010), interval and ratio scales are used frequently in social science studies when a researcher collects product rating information. The independent variable availability, while the 16% VAT that was introduced on the BOP goods was the moderating variable. The BOP market performance was the dependent variable

Since availability is the extent to which a customer is able to access and use a product. If the customer is able to access a product at the nearest location where she/he needs then its availability is good and vice versa. A five point Likert scale was used to measure the success rate of availability and the most frequent used mode of distribution. Distribution tools, distribution

channels and stock out management were used to measure the success of availability strategy. The efficiency and effectiveness of availability strategy was evaluated by the number of tools used and how well they reach the final consumer so as to reduce stock outs in the retail outlets where the consumers buy the product. A five point Likert scale was used to measure availability strategy as follows: 1=not effective, 2=slightly effective, 3=moderately effective, 4=effective, 5=very effective.

Stock out Management. Stock outs management was measured by how well the consumer accesses the product he/she needs at the nearest place without travelling far and whether all the range of SKUs the consumer requires are available. This was measured by a five point Likert scale using various percentages. The % indicated whether the products reaches the consumer on time, whether the range of SKUs are available and in all outlets that the consumer requires them from. The scale was represented by; 1=0-10%, 2-21-40%, 3=41-60%, 4=61-80% and 5= 81-100%. The effectiveness of the distribution channels was measured using a five point scale where 5, represented very effective to 1 which represented not effective. The percentage of business lost was measured using % of business lost.

Bottom of the pyramid market performance refers to the change in consumption of goods due to the implementation of the 4As strategies by the FMCGs, specifically the Availability strategy. This was measured using two indicators, namely the % change in sales and size of BOP market share occasioned by the implementation of the availability strategy. Auclair (2008) supported this view by stating that the urban BOP consumer if properly targeted creates new markets which increase consumption of goods and increases market share.

Growth in consumption. Growth in consumption was measured using % growth in sales. A 5-point scale was used where; 5=81-100%, 4=61-80%, 3=41-60%, 2=21-40% and 1=0-20% was used. Market share was measured using the proportionate market share of BOP as a % of the total market. A five-point scale was provided where; 5=81-100%, 4=61-80%, 3=40-61%, 2=21-40% and 1= 0-20%. The Table 2 is a summary of how each variable was measured.

Table 2: Operationalization of study Variables

Type of Variable	Variable Name	Variable Indicators
Dependent Variable	Performance at BOP Market	BOP consumption when products are made available; the indicators are: • % growth of BOP sales • BOP Market share
Independent Variables	Availability strategy	Extent to which a product is readily accessible to the consumer. The parameters are: • Stock out management • Distribution tools • Distribution efficiency and effectiveness

Source: Research data (2017)

4.0 Results

The purpose of this study was to evaluate the effectiveness of Availability strategy on the performance of FMCGs at the BOP in Nairobi County, and whether taxation moderates this relationship.

4.1 Response Rate

Out of the 130 questionnaires distributed,   102 were filled up by the sales and marketing managers. This was a response rate of 78.4%. The findings are shown in Table 3.

During inferential statistics analysis, a number of respondents' questionnaires were removed from the model because they were found to be affecting the model adversely due to the effect of outliers. This therefore reduced the actual frequency in the model from 102 to 84 questionnaires, this is in line with Hair, Black and Babin (2010); and Abbott and McKinney (2013) who stated that cases or observations showing characteristics or values that are markedly different from the majority of cases in a data set should be dropped. This is because they distort the true relationship between variables, either by creating a correlation that should not exist or suppressing a correlation that should exist.

Table 3: Response Rate

Response Rate	Frequency	Percent
Responded	102	78%
No Response	26	22 %
Total	**130**	**100%**

Diagnostic Tests

Reliability Testing Cronbach's Alpha test was carried out on the three variables so as to a certain their reliability. The measure ranges from 0 to 1 and the higher the coefficient, the more reliable or consistent the construct is. The reliability results are presented in Table 4

Table 4: Reliability Test of Constructs

Construct	No. of Items	Cronbach's Alpha	Status
Availability	18	0.782	Acceptable
Taxation	20	0.701	Acceptable
Bottom of the Pyramid	20	0.888	Acceptable

The reliability statistics were 0.791 for availability, 0.701 for taxation and 0.888 for the BOP performance. All the three variables passed the minimum coefficient alpha threshold of 0.70 and this meant that they were reliable and therefore full data collection commenced.

Tests of Normality. To test for normality, skewness and kurtosis statistics were used. A value of zero means that the distribution is symmetric, while a positive skewness is shown by a greater number of smaller values, and a negative value indicates a greater number of larger values. A kurtosis value near zero indicated the shape of data was close to normal. A negative value indicates a distribution which is more flat than normal, and a positive kurtosis indicates a shape

peaked than normal. According to Creswell (2008), statistic values of +/- 2 for Kurtosis and Skewness are adequate for statistical analysis.

The results of normality test are presented in Table 5

Table 5: Test of Normality

Variable	Mean	Std. Dev	Skewness	Kurtosis
Availability Strategy Bottom of the Pyramid	.0100	0.81272	-0.079	-0.239
Market performance	-.1319	0.72869	-0.190	0.179

As seen from Table 5, the Availability construct had a mean of 0.0100, standard deviation of 0.81272, skewness statistic of -0.079 and kurtosis of -0.239, while the bottom of the pyramid performance construct had a mean of- 0.1319, standard deviation of 0.72869, and skewness of 0.190 and finally a kurtosis of 0.179.

For all variables, skewness and kurtosis coefficients were well within +/-2 and hence a conclusion that the data was normally distributed. This therefore meant that the assumption of normality in linear regression analysis was satisfied. Data can be considered to be normal if the skewness and kurtosis is between +1 and -1. According to Cunningham (2005), data results values of between +1and –1 in skewness and kurtosis are normal but values +2 and -2 are still acceptable.

Demographic Statistics
Period Worked in the Company. The distribution of responses according to the period that the managers in the organization is presented in Table 6

Table 6: Period Worked in the Company

	Frequency		Percentage
<3 years	23	23.5	
3-5 years	35	35.7	
6-10 years	32	32.7	
more than 10 years	8	8.1	
Total	98	100.0	

The findings show that majority of the respondents, 77%, had worked with the fast moving consumer goods companies for more than 3 years, a period long enough to be conversant with the way the companies develop and implement their strategies especially for the BOP consumers who were the main focus of this study. This therefore meant that the information provided by the respondents was reliable and could be used to make conclusions on the study hypotheses.
Age of the Company
The distribution of the age of the respondents is presented in Table 7

Table 7: Age of the Company

Number of Years	Frequency	Percent
1-5 years	3	3.0
6-10 years	9	9.1
11-15 years	5	5.1
Over 15 years	82	82.8
Total	99	100.0

Table 7 shows that 83% of the companies had operated for more than 15 years. The fact that the most of the companies, 88%, had operated for more than 11 years meant they had enough time to prepare and evaluate the strategies and monitor them. This may have contributed to their longevity, for more than 11 years, and therefore the findings from this study could highly be relied upon to test the hypotheses.

Types of Products the Company Sells
Table 8 shows the type of products that the companies sold.

Table 8: Type of Products the Company Sells

Product Types	Frequency	Percent (%)
Foodstuff only	64	66.0
Personal Hygiene only	18	18.5
Foodstuffs & Personal Hygiene	15	15.5
Total	97	100.0

The findings reveal that 66% of the companies were selling foodstuffs only, 19% were selling personal hygiene products and beauty care products only, while 15% of the companies were selling both foodstuff and personal care products.

Descriptive Statistics on the Availability Strategies
Availability is a key strategy in the objective of growing the BOP market for the FMCG companies. Bottom of the Pyramid market can only grow if the availability strategies are both effective and efficient and these are the tactics that this study sought to investigate in the questions that were directed to the respondents of FMCG companies. The study sought to evaluate the effectiveness of the availability channels which are normally used to grow the BOP market. The channels are the supermarkets, general shops, groceries, convenience stores, kiosks and semi –permanent structures and multi-level distribution. The results for the study are analyzed in Table 9

Table 9: Effectiveness of Availability Channels

Availability Information	Not effective (%)	Slightly effective (%)	Moderately effective (%)	Effective (%)	Very effective (%)	Mean	Std. Deviation
Supermarkets	5	12	39	27	17	3.39	1.06
General shops and groceries	1	3	18	39	38	4.51	4.08
Convenient stores	6	20	42	24	7	3.06	0.99
Kiosks and semi-permanent structures	4	13	17	19	46	3.9	1.24
Multi-level direct to final consumer	29	34	21	7	8	2.3	1.20

On the supermarket channel, 85% of the respondents voted this channel as effective in increasing the BOP market. The results do not concur with most BOP empirical data which claim that BOP consumers hardly carry out shopping in the supermarkets but an indication that this could be a future strategy to consider. With regard to the general shops and groceries channel, 95% of the respondents agreed that the channel is quite effective, this is a confirmation of the empirical review that notes this as a channel that has always been used by the FMCG companies to avail products to the BOP market.

Under the convenient stores channel, 42% said the channel is moderately effective, 24% agreed that the channel is effective while only 7% stated the channel is effective in the BOP market prompting a conclusion that the channel should not be ignored and could be a very good channel to sell BOP products in future.

Under the kiosks and semi-permanent structures channel, 66% of respondents agreed that this channel is very effective in improving the BOP market. The results are well supported by the BOP literature that the channel is very effective in availing BOP products. On multi-level channel, that is direct to the final consumer channel, 29% of the respondents said the channel is not effective, 34% said the channels is slightly effective, 21% indicated the channel is effective, 7% said the channel is effective and 8% said the channel is very effective in availing products to the BOP market.

The mean was also used to evaluate the effectiveness of the various channels and the results were 3.39 for the supermarkets, 4.51 for the general shops and groceries, 3.06 for the convenient stores, 3.9 for kiosks and semi-permanent structures and 2.3 for the multi-level channel that is direct to final consumer channel. This in summary meant that the general shops and groceries channel are the most effective, followed by kiosk and semi-permanent structures, then supermarkets and finally the multi-level direct to consumer channel which scored a mean of 2.3 out of the maximum score 5. The fact that multilevel channel scored 2.3 which is less the

average of 2.5 meant that this channel is not very effective in availing products to the bottom of the pyramid market in Kenya.

Amount of Bottom of the Pyramid Sales made through the Channels
Respondents were asked to give the percentage of business the various channels sell. The results are shown in Table 10.

Table 10: Amount of BOP Sales Sold Through Channels

Percentage of Sales Volumes	0-10 %	>10-20 %	>20-30%	>30-40%	>40 %	Mean	Std. Deviation
Supermarkets	9	24	46	17	4	2.83	0.95
General shops and groceries	1	10	40	38	11	3.48	0.86
Convenience stores	14	51	26	9	0	2.3	0.83
Kiosks and semi-permanent structures	7	21	38	18	15	3.13	1.13
Multi-level direct to final consumer	49	26	13	2	10	2	1.28

On the supermarket channels, the mean was 2.83 out of 5, meaning the channel does not move a lot of volumes of BOP sales and hence a conclusion that this is not a very good BOP channel.

The mean for general trade and groceries channel was 3.48 out of 5, meaning this is a very good channel for BOP sales.

Convenience stores had mean for this channel was 2.3 out of 5, meaning the channel is not a good one since this falls even below the 50% mark and therefore not a preferred channel for targeting growth in BOP market. In the kiosks and semi-structures channels, the mean was 3.13 out of 5, meaning this is a good channel to use for BOP sales. The findings are well supported by the literature on the BOP market.

The multi-level channel, had a mean of 2 out of 5 meaning that this is not a good channel to use for BOP sales.

Proportion of BOP Sales Carried through the Availability Tools

The study also sought to evaluate the proportion of goods which are distributed through the various tools of distribution. The availability tools are pickups and three-wheeler, 2-3 ton vehicles, 3-5 ton vehicles, 5-7 ton vehicles, motor bikes and bicycles, and human pooled tools like trolleys. The findings are well summarized in Table number 11.

Table 11: Proportion of BOP Business Carried by Distribution Tools

Tools	% of BOP carried					Mean	Std. Deviation
	0-10%	>10-20%	>20-30%	>30-40%	>40%		
Pick-ups and three-wheeler (Tuk-Tuks)	14	22	33	20	10	2.9	1.18
Vehicles 2-3 tones	10	9	36	42	2	3.17	0.99
Vehicles>3-5 tones	17	37	37	8	1	2.39	0.90
Vehicles>5-7 tones	62	26	7	4	1	1.56	0.87
Motor bikes and bicycles	14	38	32	11	5	2.55	1.04
Human pulled tools like trolleys	70	11	10	6	2	1.58	1.04

Pickups and the three-wheelers had a mean of 2.9 out of 5 indicating that this is a good BOP market distribution tool.

The 2-3 ton distribution vehicle had a mean was 3.17 out of 5 meaning this is also a good distribution tool. In the 3-5 tones category of vehicles a mean of 2.39 was recorded and hence a conclusion that this is not a good tool for availing BOP products drawn. With a mean of 1.56 out of 5 in the 5-7 ton vehicle category, the results show that this is a very poor distribution tool and should not be considered when FMCG companies want to boost BOP sales. The motor bike and bicycle category had a mean of 2.55 out of 5 an averagely good tool which can be considered especially because the tool can easily get to crowded places where vehicles may not reach due to congestion and lack of good infrastructure. In human pulled tools like trolleys, a mean of 1.58 was recorded confirming them as very poor tool to utilize.

Most Effective Tool of Distribution
Respondents were asked to state the most effective and most efficient tool of distribution and the results are analyzed in Table 12.

Table 12: Most Affordable and Effective Tool of Distribution

Effectiveness in terms of cost per unit and accessibility:	Not Effective (%)	Slightly Effective (%)	Moderately Effective (%)	Effective (%)	Very Effective (%)	Mean	Std. Deviation
Pick-ups and three-wheeler (Tuk Tuks)	5	8	23	44	19	3.65	1.04
Vehicles 2-3 tonnes	14	9	22	42	13	3.31	1.23
Vehicles>3-5 tonnes	23	30	30	14	2	2.41	1.06
Vehicles>5-7 tonnes	43	40	8	2	7	1.9	1.11
Motor bikes and bicycles	7	11	26	39	16	3.46	1.11
Human pulled tools like trolleys	32	39	4	12	12	2.32	1.36

On the pickups and three-wheelers, 86%, agreed that this is an effective tool in terms of distribution of products and cost per unit and the results are confirmed by the mean of 3.65 out of the maximum of 5.

The effectiveness of the 2-3 tone vehicle availability tool was rated by 77% by respondent and supported by a mean of 3.31 out on a scale of 1 to 5. On the 3-5 tone vehicle availability tool, 44% of the respondents felt the tool is effective, a mean of 2.41 out of the maximum of 5. The results indicate the tool is not effective in the BOP market. For the over 5-7 tone vehicle availability tool, only 17% of the respondents felt this tool is effective and this is supported by the mean of only 1.9 out of the maximum of 5; a confirmation that the tool is not effective in accessing the BOP market and therefore should not be used.

With regard to the motorbike and bicycles availability tool, the results summary show that the tool was effective with a rating of 81% and this is confirmed by the mean of 3.46 out of 5 which simply confirms the availability tool is efficient. Further, the results on the human pulled tools show that the tool is not effective as an availability tool for the distribution to the BOP market because its overall rating was only 28% on effectiveness and this is confirmed by the overall mean of 2.32 which falls short of threshold mean of 2.5.

The results therefore show that out of the six distribution tools which are used as a strategy to avail products to the BOP market, only three are effective since their means are above the thresholds of 2.5 and these are pickups and three-wheeler with a mean of 3.65, motor bikes and bicycles with 3.46 and 2-3 tone vehicle availability tool with a mean of 3.31. In ranking therefore, the most effective tools of distribution to the BOP market are the pickups and three-wheelers (M=3.65, SD=1.04) followed by motorbikes and bicycles (M=3.46, SD=1.11)), and then the 2-3 tone distribution vehicles (M=3.31, SD=1.23) respectively. This is the order FMCG companies should consider while coming up with the most effective tool which will improve the BOP market size.

Proportion of Business Lost Due to Stock Outs
Availability of products in the retail outlets where the final consumer buys the product is key because consumers will normally switch to their second-best choice if they find that their brand of choice is missing in the retail outlet. Fast moving consumer goods companies lose a lot of market when their products are missing in the outlets. Companies should make sure that their most preferred outlets have their products because consumers normally switch to competitor brands if they find their preferred brand of choice is missing. Table 13 shows the proportion of business lost due to stock outs.

Table 13: Proportion of Business Lost Due to Stock Outs

Percentage of Business Lost Due to Lack of Products in the Retail Outlets	Frequency	Valid Percent (%)
0-20%	12	12
>20-30%	26	26
>30-40%	47	48
>50%	14	14
Total	99	100

According to the results, 12% of the respondents said they lose approximately 0-20% of their business when consumers go shopping in the various retail outlets and find that their brand of choice is missing and therefore opt for the second-best choice.

Respondents who said they lose 20-30% of their business when they visit the various retail outlets and find that their brand of choice is missing were 26%. Forty eight percent (48%) of the respondents stated that they lose 30-40% of their total BOP market orders when the customers visit the retail outlets and encounter stock outs of their brand of choice. The findings in Table 13 show that businesses can lose close to 40-50% if consumers do not find their brand of choice in the outlets they carry out their shopping. Finally, the percentage of the respondents who stated they lose more than 50% of their business due to stock outs were 14%. The results clearly show that if FMCG companies do not manage stock outs in the retail outlets, they can lose more than 50% of their sales. This is an important finding which should be given priority by FMCG companies which are planning to increase their BOP market segment.

Average Mean Effect of Availability Strategies on BOP Market
The effects of availability tactics on the BOP market were analyzed and the findings are presented in Table 14.

Table 14: Average Mean Effect of Availability Strategies on BOP Market

Availability	BOP Market Share	Sales Growth
Distribution Tools	.4210	0.781
Distribution Channels	.4990	0.419
Stock out/Distribution Gaps	.3180	0.562

They show that there is a positive influence between availability strategies and the BOP market. An improvement of distribution tools and distribution channels by one unit would increase the BOP market by 0.421 and 0.499 respectively. At the same time, an improvement on the distribution gaps; that is a unit improvement in availability of products would lead to 0.318 improvement in market share. The findings suggest that the most important tactics are improvement in distribution tools and distribution channels. However, improvement in stock outs management would also increase market share significantly.

Table 15: Whether BOP Consumers get their Brand of Choice when they Visit their Outlet of Choice

Responses	Frequency	Percent		Cumulative	Percent
Yes	89	60.4	60.4		
No	59	39.6	100.0		
Total	148	100.0			

On availability of products in their outlet of choice, 60.4% said yes, meaning they get their brand of choice when they visit their most preferred outlet. By implication this means there is a 39.9% stock out of FMCG goods in the retail out. One of the deductions of these results is that the consumer who missed his/her preferred brand of choice will most likely buy the competitor brand. This means if the distribution strategy is not right for a certain brand, its competitor will gain and the brand of choice market share will be affected. For a fast-moving consumer goods company, this stock out level is high and companies need to address this challenge. These findings concur with the ones from the sales and marketing findings and confirm that stock out is a key challenge FMCG market this needs to be addressed if the sales for BO companies is to improve.

When the BOP consumers were asked to give their advice to FMCG companies on how to address stock out challenge in the retail outlets, they gave two options as shown in Table 16.

Table 16: Recommendation to FMCG Companies by BOP Consumers on Stock out Management

Available Options	Frequency	Percent	Cumulative Percent
Deliver the products more often	119	80.5	80.5
Avail the products	29	19.5	100.0
Total	148	100.0	

The first category which was 80.5% of the consumers stated that the FMCG companies should increase their frequency in delivery times while 19.5% of the consumers stated that the FMCG companies should avail more products to the retail outlets. By implication, what this means is that the owners of the retail outlets are not stocking enough products to meet the consumer demand maybe due to either lack of enough space or lack of funds to stock enough products and hence the reason why the consumers requested the FMCG companies to service the outlets more frequently.

The descriptive statistics indicate that the three availability strategies are effective at the bottom of the pyramid market because the respondents agreed that most of the aspects of these strategies were effective. The availability strategies that were found effective were distribution tools, distribution channels, and stock out management practices; these results partially support H1a, H1b and H1c. Further, hypotheses were tested using regression analysis as presented in the next section

Test of Hypothesis

Figure 2 shows a scatter graph of availability strategies and bottom of the pyramid market in Kenya. The diagram indicates a positive gradient which is an indication that availability strategies affect sales and market share of FMCGs firms at the bottom of the pyramid market. Based on the scatter graph and the t-statistics, the null hypothesis was thence rejected since the graph indicates a positive linear relationship.
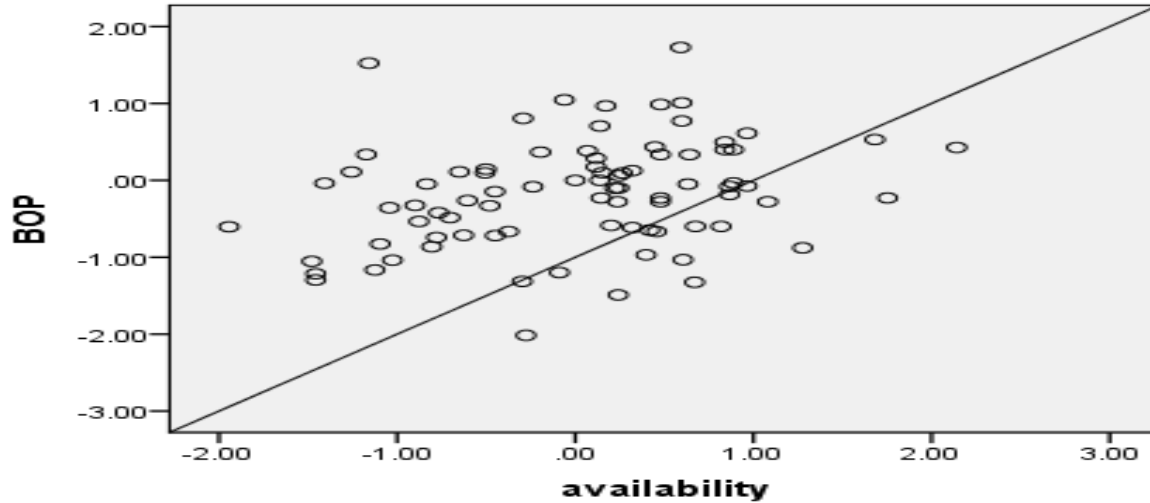

Figure 2: Scatter Diagram of the Bottom of the Pyramid versus Availability Strategies

From the scatter plot, there is a positive correlation between availability strategy and the BOP market performance among FMCGs in Nairobi County, Kenya. Based on this finding, the hypothesis was tested using linear regression analysis.

Secondly, to test the hypothesis(H1) that availability strategies have positive and significant effect on the performance of FMCGs firms at bottom of the pyramid market in Kenya, a linear regression F-test was carried out using ANOVA to determine whether there was a significant relationship between availability strategies and the bottom of the pyramid market in Kenya. The results of the linear regression indicate that $r = 0.412$ and $R2 = 0.169$. This is an indication that there is a moderate significant effect of availability strategies on the bottom of the pyramid market performance among FMCG companies in Kenya. This relationship is explained in Table 17.

Table 17: Availability Strategies and Bottom of the Pyramid Market Model

R	R Square	Adjusted R Square	Std. Error of the Estimate
.412	0.169	0.159	0.66624

Dependent Variable: Performance at Bottom of the Pyramid Market Predictors: (Constant), Availability Strategy

Table 18 shows results of ANOVA

Table 18: ANOVA (b) Availability Strategies and Bottom of the Pyramid Market Model

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.424	1	7.424	16.726	.000[(b)]
	Residual	36.397	82	.444		
	Total	43.822	83			

a. Predictors: (Constant), Availability Strategy

Dependent Variable: Performance at Bottom of the Pyramid Market

Table 18 shows results of the ANOVA. F-test results of 16.726 and the critical values of F-test (1, 83 degrees of freedom) at 0.05 is 3.84 < 16. 726. The null hypothesis was rejected and a conclusion that there is a linear relationship between availability strategies and bottom of the pyramid market in Kenya drawn. It was also revealed that availability strategies have a significant effect on the bottom of the pyramid market in Kenya since P-value is <0.001 which is less than 5% level of significance.

To test this hypothesis, the beta coefficient was computed and t-test used to test the significance of the coefficient associated with the availability strategies and bottom of the pyramid market in Kenya. This was tested at 5% significant level. The t-test results showed that the β coefficient was statistically significant since t-value at 5% is 4.090>critical t=1.96. The null hypothesis was rejected as the t-test indicated that β coefficient was different from zero, at 5% significant level. To examine the influence of availability strategies on performance of FMCG firms at the BOP, a regression analysis was done and the regression coefficient results are presented in Table 19.

Table 19: Availability Strategies and performance of FMCGs at the Bottom of the Pyramid Market

Model		Coefficients B	Std Error	t	Sig
1	(Constant)	-0.170	.073	-2.333	.022
	Availability strategy	.226	.055	4.090	.000

a. Dependent Variable: Performance at Bottom of the Pyramid Market

The results in Table 19 a positive coefficient (gradient) between availability and performance at the BOP market which reveals that an improvement of access to and use of products through availability strategies significantly increases the (β = 0.226, p<0.001) sales and market shares of FMCGs firms at bottom of the pyramid market.

Test of Hypothesis Two: The moderating effect of Taxation
To test the moderating effect of taxation (the 16% VAT) on the relationship between Availability and performance of the BOP market H02: Taxation (16% VAT) *has no significant moderating effect on the bottom of the pyramid market in Kenya.*

Table 20. Coefficients for Unmoderated Model

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.139	0.052		-2.689	0.002
	Availability	0.221	0.069	0.24	3.231	0.004

a. Dependent Variable: BOP market share

The coefficients for the interaction variable are presented in Table 21.

Table 21. Coefficients of Moderated Model (interaction variable)

Coefficients Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	T	Sig.
		B		Beta		
1	(Constant)	-0.201	0.061		-3.281	0.002
	Availability*Taxation	0.203	0.069	0.304	2.922	0.004

a. Dependent Variable: BOP Market share

Further, unmoderated $R^2 = 0.606$ while the Moderated $R^2=0.439$; this implies that 16% VAT negatively and significantly affects the relationship between availability strategy and the market share at the bottom of the pyramid market.

Discussion
The objective of this study was to examine the effects of availability strategies used by fast moving consumer goods companies on their performance at the Bottom of the Pyramid market in Nairobi, Kenya. As stated by Anderson and Markides (2006) availability is the extent to which customers acquire and use a product and this is achieved through the distribution of the product to the final consumer. On availability strategies the main findings to note were on the most effective tools and channels for the BOP market and the amount of business lost due to stock outs that is the amount of business lost if consumers do not find their brand of choice in the outlets they carry out their shopping.

The top three distribution channels as seen in Table 9 were general shops & groceries, kiosks & semi-permanent structures and supermarkets. The top three most effective tools of distribution in terms of cost per unit and accessibility were Pickups and Tuk Tuks (three-wheeler vehicles), motor bikes& bicycles and the 3-tone vehicle capacity respectively from number one to number three.

One of the major findings of this study was that stock out is a key issue in the FMCG companies and unless managed the business could lose close to 50% of its BOP sales if consumers do not find their brand of choice in the outlets they carry their shopping. The results are shown in Table 13.This shows stock out is a major challenge which could affect the growth of BOP products if not well addressed. The implication to FMCG companies is that they must put in measures to

ensure that outlets where consumers carry their shopping are well stocked all the time even it means servicing the outlet out often.

These findings are well supported by the ANOVA test results which clearly indicated that availability is significant as shown in Table 17. Results of the R2 value (0.169) indicating that availability strategies affect bottom of the pyramid market to some extent also shows the critical role played by availability in ensuring that goods are accessed by the BOP consumer when he/she needs them. The findings concur with Chikweche & Fletcher (2011) who stated that BOP markets experience poor distribution and lack of reliable transport and this must be resolved if the BOP market is to improve. Further, 16% VAT negatively and significantly moderates the relationship between Availability strategies and bottom of the pyramid market performance (sales and market share).

5.0 Conclusion and Recommendation

The findings of this study show a positive coefficient (gradient) between availability and performance at the BOP market which reveals that an improvement of access to and use of products through availability strategies significantly increases the ($\beta = 0.226$, $p < 0.001$) sales and market share of FMCGs firms at bottom of the pyramid market. It should also be noted that in the same year, the government reversed its decision to introduce 16% VAT on milk, maize flour and bread due to the serious loss of business the companies were facing and the huge outcry by the BOP consumers who felt that basic goods were no longer affordable to them. The study recommends that the government develops the right policies to protect the BOP consumer who relies on very limited income and must buy the entire basket of goods daily to feed his/her entire family daily.

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