

THE MODERATING EFFECT OF INDUSTRIAL CONTEXT ON THE RELATIONSHIP BETWEEN BRAND EQUITY AND CONSUMER CHOICE IN BRANDED BOTTLED WATER NAIROBI, KENYA

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Abstract

Previous research has shown that brand equity influence consumer choice, however this literature has been limited to broad base view of choice in which specific industry and location characteristic have not been explicitly been examined. This study examines the moderating effect of the Industry context on the relationship between brand equity and consumer choice in the branded bottled water, among supermarkets customers in Nairobi Central Business District, Kenya. The sample size was 400 respondents, comprising of 373 customers and 13 employees of supermarkets. Data was collected using a semi structured questionnaire and an interview guide. Industry context factors influence on the relationship of brand equity influence consumer choice was predicted through the use of a logit model. The research findings indicated that market place efficacy and valence have a moderating role on the influence of brand equity on consumer choice.

Keywords: Industry context, Brand equity, Logit model, Efficacy, Valence

Introduction

Consumers are overwhelmed with a vast array of choices in today's retail marketing environment. This is especially because they are exposed to so many items in the market and they have to make quick decisions based on the items they ought to be and which can be catered for by their disposable income. The decision the consumers make determines the item they select and eventually buy. The manufacturers, on their part, have to be innovative

and creative to ensure that customers get to pick their items if their firms have to be remain competitive in the market. Branding of their items is one the strategies that companies such as supermarkets may adopt to attract consumers to their goods and to ensure these goods get picked and re-picked.

According to Leighton (2012), the average supermarket has over 50,000 Stock Keeping Units (SKUs), while the average retail shopper buys around 50 items in 50 minutes. Therefore, consumers make a decision while facing around 800 items per minute. However, consumers are not able to attend to all of the items on display, let alone weigh up all of the available options; they must decide what to buy from what is presented to them during purchasing (Leighton, 2012). Similarly, Ogbuji, (2011) asserts that for consumers to make fast decisions, they need to use mental shortcuts or heuristics which will guide them in their choices. These cues which are present in the environment will guide the shopper's attention and aid their decision making while in the store.

The distinction between goods /services provided and products that are in competition in the market is the starting point for brand marketing which is crucial to the success of organizations. In recent years the issue of brand and particular brand awareness (BA) has attracted attention of researchers in the field of marketing and institutions that are evaluating brand awareness.

The manufacturers are competing for the disposable income of consumers, and for them to stand out, they need to enhance their image to capture the consumer's attention in less than a second while they are doing their shopping. Consumers are generally constrained by both time and money, and for the manufacturers to succeed in influencing consumers' choice, they have to instil in the consumer's confidence in the product the latter wish to purchase. Brand equity in a product may significantly influence a consumer's decision

The understanding of the sources and outcomes of brand equity provides a common denominator for interpreting marketing strategies and assessing the value of a brand. The managers of fast moving consumer goods (FMCG) need to understand and focus on what drives their brand equity, in which the outcomes of brand equity will help these managers to understand exactly how and where brands add value (Keller 2003). The reasons for this study is as a result of increased cross border population mobility and electronic mobility which have contributed to faster transfer of ideas and a global convergence in consumer tastes and values, and as such having a specific industry analysis of brand equity influence on consumer choice is the aim of this study.

The bottled water industry, and supermarkets in Kenya

The bottled water industry in Kenya started in 1992, with the entry of Keringet mineral water, which was billed as the first natural underground mineral water. The concept in 1992 was relatively new and buying and using bottled water then were seen as indicators of social and economic class. In the preceding years, many new companies entered the market, and the perception of buying bottled water changed overtime from class to health consciousness.

There exists in the Kenyan Industry, over 100 companies which sell an estimated 424 million litres of bottled water valued at about Kshs. 12 billion in the country annually with a 10% annual growth (Kenya Revenue Report, 2011). There is need for bottled water companies to examine the effects of brand equity on consumer choice, and how they can gain a higher market share in a very competitive market.

Although few studies have investigated branding theory from the retailing perspective, it is important to identify some of the key points in this context. First of all, the important role of 'brand' in the retailer context has been confirmed by Baldauf *et al.*, (2003), Davis (2000) and Glynn (2004). These are consistent with Webster's (2000) findings, whereby relationship management is a key aspect of brand equity in terms of the inter-organisational exchange from the supply chain perspective.

Literature Review

This study will focus on the consumer-based brand equity by Aaker, (1991) and Keller (1993; 2003), whose study findings indicate the differential effect brand knowledge has on consumer choices. Keller (2003) asserts that marketers need to build a brand in a series of four steps. Firstly, markets ought to comprehend how each and every consumer is able to identify the brand that satisfies their needs, which in most cases is operationalized as awareness.

In parallel, brand equity research rooted in information economics draws on the imperfect and asymmetrical nature of markets (Erdem & Swait 2006). Economic agents, in this context, are required to transmit information about their specific characteristics by means of signals. Brand names, according to Erdem *et al.*, (2006), act as signals to consumers. A brand signal becomes the sum of that brand's past and present marketing activities. Imperfect and asymmetrical market information produces uncertainty in consumers' minds. A credible brand signal generates consumer value by reducing perceived risk, reducing information search costs, and creating favourable attribute perceptions (Erdem *et al.*, 2006).

Brand equity can be grouped into five categories: perceived quality, brand loyalty, brand awareness, brand association, and other proprietary

brand assets such as patents, trademarks, and channel relationships. Among these five brand equity dimensions, the first four represent customers’ evaluations and reactions to the brand that can be readily understood by consumers (Yoo & Donthu, 2001).

Despite a lot of media publicity on fast moving consumer goods and services, consumers are always faced with uncertainty when making a choice. Furthermore the influence of brand loyalty, brand awareness, perceived quality and proprietary brand assets remain rudimentary and more so in the Kenyan context. Research documented in Kenya has also failed to establish the importance of the dimensions of brand equity and their influence on consumer choice.

Conceptual Framework for the Study.

Brand equity is defined as the value that consumers associate with a brand (Aaker 1999) and is the consumers’ perception of the overall superiority of a product carrying that brand name when compared to other brands. The conceptual framework for measuring customer-based brand equity is developed by using the conceptualization of Aaker’s dimensions of brand equity. The model below bears a figure that elaborates how industry context affects the relationship between a brand equity and consumer choice. To ensure conclusive results, the study will entail to capture how industry context affects brand equity, consumer choice and the relationship of both dependent (consumer choice) and independent (brand equity). Therefore, the moderating variable which is the core of our study, will describe the positive or negative influence it has on the independent and dependent variables.

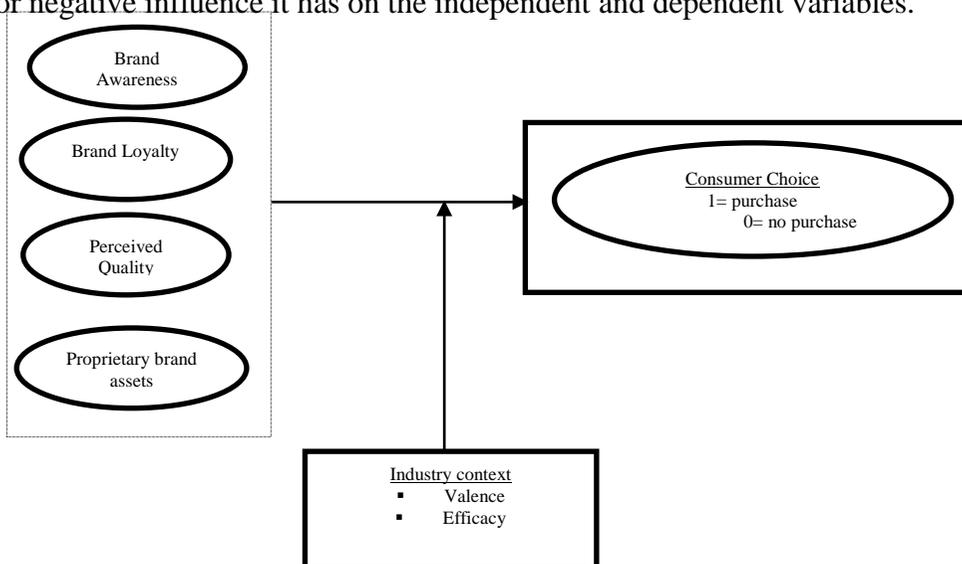


Figure 1: Conceptual Framework showing industry context moderating influence on the relationship between a brand equity and consumer choice.

Source: adopted from Aaker (1991) and modified by the researchers (2013)

Based on figure 1 the following hypothesis was developed:

H₀₁: Industry context has no statistically significance moderating relationship between brand equity and consumer choice, of branded bottled water among supermarkets customers in Nairobi Central Business District, Kenya.

Methodology

The research design used in this study was explanatory research using cross-sectional survey design. The explanatory research was ideal to describe the characteristics of the variables and at the same time investigate the cause effect relationship between variables (Malhotra & Birks 2003). The choice of cross-sectional allowed collection of quantitative data from a population in an economical way (Mugenda & Mugenda 2003; Saunders *et al.*, 2009). This design was archetypal because of its suitability in elaborating the characteristics of a particular individual or a group of individuals (Kothari, 2004).

From the conceptual framework, consumer choice (Y) is a function of the composite variable brand equity whose components are brand awareness (BA), brand loyalty (BL), perceived quality (PQ) and proprietary brand assets (PB). Hence:

$$Y = f(BA, BL, PQ, PB) \dots\dots\dots 1.1$$

Consumer choice Y is a latent or unobserved variable. However, it is made concrete when purchasing decisions are made. To this end Y is estimated using consumer purchase decision. To achieve the study objectives a logit model was adopted.

Purchasing decision, Y can be categorized as follows:

$$Y = \begin{cases} 0 \text{ if } \text{no purchase} \\ 1 \text{ if } \text{Purchase} \end{cases} \dots\dots\dots 1.2$$

Assuming Y follows a logistic distribution, it follows that:

$$Y_i = \frac{e^{\beta_0 + \beta_1 BA + \beta_2 BL + \beta_3 PQ + \beta_4 PB + e}}{1 + e^{\beta_0 + \beta_1 BA + \beta_2 BL + \beta_3 PQ + \beta_4 PB + e}} \dots\dots\dots 1.3$$

Where: β_i represents a vector of parameter estimates for each independent variable defined in the latent regression model in equation 1.1

Equation 1.3, the logistic regression model, is non-linear in parameters. β_i Coefficients measure the natural logarithm of predicted probabilities odds ratio rendering β_i coefficient difficult to interpret. To establish the marginal effects of independent variables on the purchasing decision, the following equation was estimated:

$$\frac{\partial P}{\partial X_i} = \beta_i P(1 - P) \dots\dots\dots 1.4$$

Where: β_i is the corresponding coefficient and P is the probability that one moves from no purchase category to purchase.

To establish whether industry context mediate between consumer choice and the explanatory variables three models were to be estimated. First model 1.3 was estimated as the base model to determine the relationship between the dependent variable and the independent variables. Secondly, Keppel and Zedeck (1989) suggested that moderation is captured by estimating multiple regressions models as specified. Model 1.5 included industrial context (IC) as an explanatory variable

$$Y_i = \frac{e^{\beta_0 + \beta_1 BA + \beta_2 BL + \beta_3 PQ + \beta_4 PB + \beta_5 IC + e}}{1 + e^{\beta_0 + \beta_1 BA + \beta_2 BL + \beta_3 PQ + \beta_4 PB + \beta_5 IC + e}} \dots\dots\dots 1.5$$

In addition, model 1.6 was estimated to give the direction and effect of the moderator on the independent variables and its total effect on the dependent variable.

$$Y_i = \frac{e^{\beta_0 + \beta_1 BA*IC + \beta_2 BL*IC + \beta_3 PQ*IC + \beta_4 PB*IC + e}}{1 + e^{\beta_0 + \beta_1 BA*IC + \beta_2 BL*IC + \beta_3 PQ*IC + \beta_4 PB*IC + e}} \dots\dots\dots 1.6$$

- BA*IC=Brand Awareness X Industrial Context
- BL*IC= Brand Loyalty X Industrial Context
- PB*IC= Proprietary Brand Asset X Industrial Context
- PQ*IC= Perceived Quality X Industrial Context

According to MacKinnon (2002) if β_1 to β_4 in model 1.6 are not significant but β_5 in model 1.5 is significant then industrial context is an explanatory variable. However, if β_1 to β_4 in model 1.6 are significant then industrial context is a moderator whose effect and direction are given by the β_i 's .

The target population was four supermarkets located in Nairobi Central Business District, which included Nakumatt, Uchumi, Tuskys and Chandarana who have total number of 264,808 smart card customers. The study used convenient and systematic sampling technique to select the required sample size of 400 customers.

Data Analysis

Descriptive statistics was conducted to provide salient features and characteristic of each variable of interest. In addition the mean, standard deviation and variance of each of the key variables were obtained and evaluated. Furthermore normality test was also conducted to ensure that data was fit for further statistical analysis. Prior to testing the fit of the logit

model, multicollinearity was tested using the tolerance and variance inflation factors (VIF) as recommended by Field (2009) to establish the possibility of a collinearity problem of the predictor variables.

As noted by Field (2009) empirical analysis was crucial to draw meaning of the population of study, which was accomplished through a logistic regression model. The overall fit of the model was tested using the log-likelihood and Chi-square as asserted by Field (2009). The contribution of each predictor variable was analysed using the Wald statistic.

The following diagnostic tests were conducted to measure the predictive strength of the logistic regression models; Pseudo R square and log likelihood tests. The former were used to test the goodness of fit while the later was used to test whether the coefficients are jointly significant.

To address the objective of this study binary logit models as provided in the models were estimated. Marginal effect and coefficients significance were used to draw inferences relevant to the study.

Content analysis was conducted on the open ended questions where the researcher grouped common themes together to draw inferences from the findings. Cooper & Schindler (2003) assert that content analysis assists in bringing to the fore issues that would not have been captured through the use of structured questions in the questionnaire. The results are reported in chapter four, followed by the summary, conclusions and recommendations.

Results and Discussion

Response Rate

A total of 400 questionnaires were distributed, 373, were correctly filled and returned, and in addition 13 managers and employees of supermarkets were interviewed. This represented a 96.5% response rate which was above the adequate 50% as recommended by Mendenhall *et al.*, (2003).

Descriptive Analysis

Table 1 presents descriptive statistics of the informant's characteristics in terms of demographic information such as genders, age and income.

Table 1. Characteristics of respondents

	Factors	Frequency	Percentage
Gender	Male	175	46.9
	Female	198	53.1
	Total	373	100.0
Age	25 or under	116	31.1
	26 – 40	191	51.2

	41 – 55	42	11.3
	56 – above	24	6.4
	Total	373	100.0
Income	Under 10,000	14	3.8
	20,000 – 39,999	73	19.6
	40,000 – 59,999	63	16.9
	60,000 – 79,000	47	12.6
	Over 80,000	71	19.0
	Would rather not say	105	28.2
	Total	373	100

Source: Survey data (2013)

From the table 1. Above the total sample respondents consisted of 46.9% males and 53.1% females. The dominant age groups were 26 to 40 years (51.2%) and 25 or under (31.1%). The dominant household income levels included Kshs. 20,000 to 39,999 (19.6%) and over Kshs. 80,000 (19.0%), and also Kshs. 40,000- 59,999 (16.9%). The age is a significant factor influencing brand choice of bottled water. A maximum of 51.2% of the respondents are in the age group of 26-40 and a minimum of 6.4% respondents belong to the age group of 51 and above. It shows that the brand equity of bottled water is highly prevalent to middle aged group of 26-40. Among the total respondents 46.9% are male respondents, 53.1% of the respondents are female.

Income of the respondents is a factor which directly affects the quality and quantity of consumer choice intentions among brand of bottled water. It was found that a maximum of 19.6% of the respondents are in the income group of Kshs. 20,000 – 39,999, while closely followed by 19.0% of the respondents being in the income bracket of over Kshs. 80,000.

Table 2. Adjacency and Spread of exogenous variable

	Brand Awareness	Brand Loyalty	Proprietary Brand Asset	Perceived Quality	Industrial Context
N	373	373	373	373	373
Mean	4.1421	3.5114	3.8706	3.9705	3.8365
Std. Deviation	0.2136	0.0978	0.2128	0.1876	0.0966
Minimum	3.5348	3.3111	3.5384	3.3864	3.6662
Maximum	4.5042	3.7777	4.3094	4.2494	4.2144

Source: Survey data (2013)

Table 2 shows that the mean and standard deviations for brand awareness is 4.14 and 0.2136 respectively. This means that on average the respondents agreed that they take special initiative to know the manufacturers of the bottled water brands, that their bottled water brand is fixed on their mind, they can distinguish from one bottled water brand from

another and that the amount of advertising directed at bottled water helps consumers recognize these brands. The mean and standard deviation of brand loyalty were 3.51 and 0.0978 respectively. Given the significantly small standard deviation, the results imply that respondents view on loyalty was homogenous and that on average, they are somewhat indifferent with regards to loyalty.

The mean and standard deviation of proprietary brand asset were 3.87 and 0.2128 respectively and the same statistics for perceived quality were 3.97 and 0.19 respectively. With regards to proprietary brand assets, this implies that respondents agreed that class, array of brand line extension, association and visible trademark influence their choice of branded water.

On the other hand, perceived quality scores show that on average, respondents agreed that performance, product quality and service offered influence consumer's choice. Lastly, industrial context had a mean and standard deviation of 3.84 and 0.09 respectively. Given that standard deviation was relatively small, majority of respondents were of the view that lack of alternatives, supermarkets procurement practices, distribution network and access and the type or Name of the supermarket influence purchasing behaviour.

Regression analysis

The previous section presented the descriptive statistics based on customer's response on brand equity factors influencing choice. This section discuss the empirical analysis of the data using a logit model.

Table 3. Results of Collinearity Statistics

Variable	VIF	Level of tolerance (1/VIF)
Proprietary brand assets	1.71	0.585354
Brand loyalty	1.62	0.617247
Income	1.33	0.749715
Age	1.29	0.777798
Brand awareness	1.23	0.813946
Perceived quality	1.1	0.910997
Gender	1.07	0.933734
Mean VIF	1.34	

Source: Survey data (2013)

Table 3 shows that the VIF for proprietary brand assets = 0.585, brand loyalty = 0.617, income = 0.749, Age = 0.813, perceived quality = 0.910 and gender = 0.933. The mean VIF for the variables as is 1.34. The predictor variables were less than 5 and tolerance values were more than 0.2, which ruled out any possibility of multicollinearity among the explanatory variables (Field, 2009).

Table 4. presents the study findings based logistic regression. The variables used in the model were as follows; age of the respondents, gender, income, brand awareness, brand loyalty, proprietary brand assets, and perceived quality.

Table 4. Regression results for the Moderating effect

Goodness of fit	Test Statistic			
Log likelihood	-192.76			
LR test: Chi(df)	19.69		(df=7)	
Prob> chi2	0.0063***			
Pseudo R square	0.0486			
Dep. Var.= Cons. Choice	Logistic regression			Marg. Eff (dy/dx)
	Coefficients	Wald	P Value	
Gender	-0.47	3.23	0.072**	-0.08
Age	-0.354	4.15	0.042	-0.059
Income	0.187	4.97	0.026**	0.03**
Brand Awareness* Industrial Context	0.595	13.04	0.000***	0.11**
Brand Loyalty*Industrial Context	0.154	0.5	0.481	0.03
Proprietary Brand Asset*Industrial Context	0.089	0.42	0.515	0.015
Perceived Quality*Industrials Context	0.379	4.36	0.037*	0.065*
Constant	1.454	3.48	0.062	n/a

** significant at 5

percent

*** significant at 1

percent

Source: Survey data (2013)

Table 4. shows that diagnostic and goodness of fit can be relied for analysis. The log likelihood of -192.76 and LR test statistic of 19.69 with a probability value of 0.006 was significant at 1 percent. This shows that all the interacted independent variables are jointly significant and influence the dependent variable. The following observations were inferred from the tables. Interaction between industrial context and proprietary brand assets and interaction between brand loyalty and industrial context are insignificant at 10 percent level or above. This may be explained by the fact that proprietary brand asset and brand loyalty are independent of industrial context.

The results show that the interaction between brand awareness and industrial context and the interaction between perceived quality and industrial context are significant at 10 percent. The marginal effect

associated with interaction between brand awareness and industrial context is 0.11 meaning that the interaction between industrial context and brand awareness increases probability of purchasing bottled branded water by 11 percent. The marginal effect associated with interaction between perceived quality and industrial context is 0.064 meaning that the interaction between industrial context and perceived quality increases the probability of purchasing bottled branded water by 6.4 percent.

This findings are consistent with Iacobucci *et al.*, (1996) Fornel *et al.*, 1996, Jones *et al.*, (1998) that showed that industry context posits to moderate relationships, as evidenced by in the results of the study, apart from brand loyalty and proprietary brand assets, subsequent elements such as brand awareness, perceived quality show interaction of moderation. The findings of the moderating context support Otnes *et al.*, (1997) whereby consumers are disposed towards a product and feel empowered on making choices based on the level of information at their disposal. Thus the results rejects the hypothesis of this study, whereby the variable industry context moderates the relationship between brand equity and consumer choice.

Conclusion

Therefore, given that the coefficient of industrial context in table 4.4 was insignificant, and that two interaction terms have significant coefficient and positive marginal effect, the study concludes that industrial context is a positive moderator but not an explanatory variable, and therefore we reject the null hypothesis.

In considerations to theoretical ramifications, the study findings fulfils as the building block for measuring the moderating influence of industry context on brand equity influence on consumer choice. The study benefits brand research in several ways. First, brand equity's potential antecedents to specific industry in regard to brand awareness and perceived quality are important factors that consumers adhere to in a particular industry, whereas brand loyalty and proprietary brand assets are fickle to consumers, and as result they don't play a huge role in influencing consumer choice within a specific industrial context. Thus for the marketing managers it is important to note that market place efficacy and valence (industrial context) plays a role in moderating the influence of brand equity on consumer choice.

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