PRODUCT VARIATIONS AND CONSUMERS’ BRAND LOYALTY: A CASE STUDY OF SOME NIGERIAN CONSUMERS

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Abstract

The impact of variations in product price, size and quality on consumers’ brand loyalty was investigated. The variations were constant price, 5% and 20% price increase. Size and quality were varied as constant, 5% and 20% decrease. Two hundred and seventy (270) students, randomly selected from Faculty of the Social Sciences, University of Ibadan, Nigeria, were participants. Brand loyalty scales were developed and standardized to measure consumers’ loyalty to their preferred brand of bathing soap, before and after product variations. The design of the study was 3 x 3 x 3 factorial while the analysis of covariance was used to analyze consumers’ post-manipulation brand loyalty, with pre-manipulation scores as the covariate. Product price and size did not have significant main effect on brand loyalty, but product quality did with constant quality being the most superior. Price, size and quality of product variations significantly interacted in influencing brand loyalty with constant price and 5% reduction in size being the most favored at constant product quality. It was recommended that in response to increased cost of production, Nigerian manufacturers could vary product price and/or size while quality should be maintained; for the attainment of consumers’ loyalty.

Key words: Product variations, product price, product size, product quality, brand loyalty, Nigeria

Résumé

L’impact des variations du prix, de la grosseur et de la qualité des produits sur la fidélité de la marque des clients a été investigué. Les variations étaient des prix réguliers, 5% et 20% d’augmentation de prix. La grosseur et la qualité varient constamment, 5% et 20% de diminution. Deux cent soixante dix étudiants sélectionnés au hasard de la Faculté des Sciences Sociales, Université
d'Ibadan, Nigeria ont été des participants. Les balances de la marque de fidélité ont été développées et standardisées pour mesurer la fidélité des clients à leur marque préférée de savon de toilette avant et après les variations des produits. Le plan d'étude était 3 x 3 x 3 de fabrique alors que l'analyse des divergences a été utilisée pour analyser la fidélité des clients ayant été manipulé après la marque avec les résultats de pré-manipulation comme une divergence. Le prix et la grosseur du produit n'ont pas eu un effet majeur signifiant sur la fidélité de la marque. Mais la qualité du produit en a eu avec une qualité constante plus supérieure. Les variations du prix, de la grosseur et de la qualité du produit ont agi les uns sur les autres d'une manière signifiante en influençant la fidélité de la marque avec un prix régulier et 5% de réduction en grosseur étant la plus favorisée de la qualité régulière du produit. En guise de réponse à l'augmentation du prix de production, il a été recommandé que les producteurs nigérians varient le prix du produit et/ou la grosseur tandis que la qualité soit maintenue afin de réaliser la fidélité des clients.

Mots clés: Les variations du produit, le prix du produit, la grosseur du produit, la qualité du produit, la fidélité de la marque, le Nigeria

Introduction

Product variations entail changing one or more features of a firm’s product. The problems facing manufacturers in the third world countries, like Nigeria, appear to be legion. A manufacturer in Nigeria operates under an economy that is characterized by poverty, high unemployment rate, low standard of living, inflation, and low currency value; all of which translate into a continuous and unabated rise in the cost of production. In entering a market, the major goal of the producers is to optimize or maximize profits. However, no matter how laudable this goal would seem, the loyalty of the consumer is pivotal to a producers’ realization of his or her goals.

Raw materials for production are relatively scarce in Nigeria. Most products are a mixture of foreign and local raw materials. Even when the raw materials are locally available, competitive manufacturing companies scramble over these available materials, thus increasing the cost of purchase. This, in combination with the fact that it is very expensive to import raw materials into the country, brings about increased cost of production. Realization of profit calls for considerations for wise adjustments of the marketing mix, in terms of the existing product features. Ehigie and Babalola (1995) identified product price, quality and size, among others, as important product features that could influence Nigerian consumers a great deal.
Price is an important powerful component of the marketing mix, which Bovee and Thill (1992) describe as the focal point of the marketing strategy that is greatly associated to consumer brand loyalty. It is the values, usually in monetary terms, the sellers ask for in exchange for the products they are offering. Price is for most consumers and in many buying situations the most significant influencer in alternative evaluation, but is not typically used in isolation as a mix of evaluative criteria (Berkman, Linquist and Sirgy, 1997). This suggests that consumers consider other criteria, like product quality and size, in conjunction with price.

In marketing, the issue of price is so pervasive that it is often expected to do more than just generate revenue. Price, like other product features, does build an exclusive psychological image for a product brand. Berkman, et al. (1997) see brand image as the overall vision or position of a brand in the mind of the consumer. They explained further that brand image results from the perception of both tangible and intangible attributes of a product, by the consumer. For instance, price positively influenced consumers attributing higher quality to a brand that carried a higher price tag (Dodds, Monroe, & Grewal, 1991). Ehigie and Ramon (1994) also demonstrated in an experimental research that Nigerian consumers perceive products with high price as better in quality than products with low price. Nwamadi (1998) discovered that consumers are more loyal at 10% price increase than at 50% or 100% price increase of a product. This suggests that although consumers could tolerate some price increase, but not when it is relatively too high. But Ehigie and Okocha (2000) found no significant effect of price increase on brand loyalty but there was significant effect of price reduction, leading to decrease in loyalty. Thus, variations in products’ price should not be made without taking into account the feelings and sensitiveness of the end buyer.

Different market segments react to price levels and price changes differently depending on the nature of the product, its desirability and the level of product loyalty established (Brassington & Pettit, 1997). This implies that reactions to price variation of products are a function of the product’s importance to the consumer, as well as the extent to which the consumer sees the product as satisfying a need. Engel, Blackwell, and Kollat (1978) identified consumer needs as preceding the evaluation of product characteristics and subsequent choice of product. The initial level of brand loyalty also counts in determining the reactions of a consumer to any variation in a product features. In the present study therefore, level of product loyalty established with the product in context will be used as a control variable.

Cheeseright (1995) reported that manufacturers could no longer assume that higher raw material prices can be passed on to customers through higher prices. Price rise is likely to cause customer disloyalty and the question to assess is whether the extra margin earned through the higher price compensates
for the profit sacrificed on the lost volume (Brassington & Pettit, 1997). The question therefore is: would increase in price at increased cost of production affect consumer loyalty? What level of price increase would consumers tolerate and still maintain loyalty to a brand choice?

In analyzing the various explanations offered for consumers' purchase of higher priced goods, Kotler, Bowen and Makens (1996) expressed their feelings that high price accounts for both quality and prestige. In changing the quality of a product, it could be towards either relatively higher quality or relatively lower quality. According to Brassington and Pettit (1997), raising the quality offers the buying prospect higher prices and increasing profit margins for the manufacturer, while lowering the quality could result to loss of existing customers, but at the same time could open up an expanded market if it brings the product into a more affordable price range. When the cost of production increases, however, the main options left to manufacturers is to reduce product quality or maintain status quo, not to increase quality because such would further increase the selling price. The point to consider carefully is whether the target market will either recognize or value the newly changed quality.

Although size variation is another technique by which products are often varied in the Nigerian market, much research has not been conducted in this respect. Nwamadi (1998) discovered that brand loyalty at 10% size reduction was significantly higher than that at 50% reduction. Loyalty at 10% quality reduction was also better than at 50% reduction. However, her research was primarily designed to examine the independent effects of these product variations on customers' brand loyalty, not interaction effects as considered in the present paper.

For the 'helpless' consumers at the receiving end, the situation calls for cautionary, discriminatory and more rational approach in relation to purchase decisions. This is because when the price, size, and/or quality of a known product brand are/is altered, consumers could be faced with a mirage of conflict (Ehigie, 2000), especially the multiple avoidance-avoidance conflict. For instance, a consumer would want to avoid a product brand when the price is increased, the size is reduced, and/or the quality is reduced. But these product variations are inevitable in an inflationary economy where cost of production increases often. As would expect, consumers would want to engage in cost-benefit analysis in trying to reduce the conflict (Weinstein, 1993).

The expectancy theory explained also that people are rational decision makers who analyze the benefits and costs of possible courses of action and exert effort when they believe it will produce a desired outcome, whether monetary or symbolic (Vroom, 1964). In other words, possible product variations are courses of actions for consideration by consumers that they could analyze before thinking of being loyal to a product brand at variation of any of its features. Consumers would be motivated to resolve such conflict by going
for the product variation that is considered most pleasurable. Ehigie and Babalola (1995) used the opponent-process theory of consumer motivation to explain that consumers are motivated to seek product brands having features that give positive emotional feelings, and avoid those resulting in displeasure. Emotional responses play mediating roles of determining how specific product feature would influence consumer attitude towards the feature and consequently towards the brand (Izard, Kagan, & Zajonc, 1984). The question that manufacturers would therefore want to answer is: among the various ways of altering product price, size, and quality in response to increased cost of product, which would be most acceptable to consumers in gaining their loyalty?

The battle for the loyalty of a consumer involves quite a complex process that literally pitches one producer against numerous others. Consumers in most cases are faced with several close alternatives out of which he or she has to settle for one as a measure of reducing the complexities of life. The consumer demonstrates this by his or her bias for a particular product brand and commitment to it (Bovee & Thill, 1992). Thus, the bias a consumer has for a particular product brand and commitment to it, irrespective of all odds, is referred to as consumer brand loyalty. The primary benefit of brand loyalty is that it provides insurance against significant market share or loss when a new competitor appears on the scene (Ehigie & Babalola, 1995). Ehigie (1998) pointed out that brand loyalty looks like a fragile thing and is under increasing threat because a good number of alternative brands are available in the Nigerian market and incentive or promotions are often designed by competitors to undermine customer loyalty.

Brand loyalists are highly involved with particular brands and the greater the perceived risk in the purchase of a good or service, the greater consumer involvement (Berkman et al., 1997). This suggests that brand loyalists are highly sensitive to risk involved in the purchase of any product brand and variations in product features can pose such risks to consumers. If variations in product are properly done, the major advantage is that all the positive attitudes and perceptions of the original brands to the customers can be transferred to the new product that evolves (Aaker & Keller, 1990). Dibbs, Simkin, Pride and Ferrel (1991) noted that the modification should make the product more consistent with consumers’ desire so that it provides greater satisfaction, hence continued customer loyalty. According to the equity theory, motivation is influenced by perception of fairness, as people want rewards to be equitable (Adams, 1965). That is, the ratio between inputs and outcomes should be the same for the self as for others. Thus, in the face of increased cost of production in an inflationary economy like Nigeria’s, it is not out of place for consumers to expect variations in product price, size, and/or quality. But what change could still make consumers perceive equity and still be loyal to their product brand?
Against this backdrop, the present paper seeks to provide answers to the following questions:

What would represent the trend in consumers' brand loyalty if the manufacturer decides to increase her product price by 5%, 20% or keeps price constant?

In relation to brand loyalty, how would consumers react if the manufacturer decides to reduce the quality of her product by 5%, 20% or keeps quality constant?

How would consumers react in terms of brand loyalty, if the manufacturer decides to cut sizes of her product to 5%, 20% or keeps size constant?

What would characterize consumers' brand loyalty if a manufacturer decides to vary, at the same time, various degrees of product price, size and quality?

Based on the empirical findings reported and the theories reviewed, the following hypotheses are formulated:

Consumers' loyalty to preferred bathing soap would significantly be affected by variations in product price.

Consumers' loyalty to preferred bathing soap would significantly be affected by variations in product size.

Consumers' loyalty to preferred bathing soap would significantly be affected by variations in product quality.

Consumers' loyalty to preferred bathing soap would significantly be affected by joint variations in product price, size, and quality.

**Research method**

**Design**

The design for the study is a 3 X 3 X 3 factorial. Three independent variables were employed in the research, which are product price, size and quality variations. Each was manipulated at three levels, namely, 5% price increase, 20% price increase and constant price. Product size was varied as 5% reduction, 20% reduction and constant size, while product quality was varied as 5% reduction, 20% reduction and constant quality. The dependent variable for the study is consumers' brand loyalty to their preferred brand of bathing soap after simulated product variations.

**Participants**

A total of two hundred and seventy (270) individuals participated in the study. They comprised of 162 males and 108 females, randomly drawn from a population of 427 (254 male and 173 females) students who registered for a faculty course in the Faculty of the Social Sciences, University of Ibadan, Nigeria. A ratio of 3:2 was used in selecting the male and female participants using the
stratified random selection technique. In selecting the participants, the population was stratified into two: male and female strata. The admission numbers of the students were serially arranged and numbered accordingly. The table of random numbers was subsequently used to respectively select the male and female participants for the study. By the research design, 27 experimental groups emerged, thus, 6 males and 4 females were randomly assigned to a research group through systematic selection procedure. By balloting, the emerged groups were randomly assigned to each treatment group required for the study.

**Instruments**

**Product:** Bathing soap was used as the product for this research because it is the product that the population of interest (students) would frequently use. This category of product is what Kotler et al. (1996) referred to as convenience products.

**Pre-manipulation Brand Loyalty Scale:** This was designed to measure level of loyalty to preferred brand of bathing soap, prior to introduction of the independent variable. Scores on this was used for statistical control. The scale had 13 items, which emerged after the content validation of 20 originally generated items. But these items were reduced to 11 items after further scale validation, as 2 items had low item-total correlation (see Appendix I). The item-total correlation for the retained items ranged between .45 and .72 with Cronbach coefficient alpha as .81. The split half reliability coefficient obtained was .60 while the Spearman Brown coefficient was .75. The items were designed to have Likert response pattern of Strongly Agree (SA), Agree (A), No Idea (N), Disagree (D), and Strongly Disagree (SD). A participant’s level of existing brand loyalty was taken as total score on the scale.

**Post-manipulation Brand Loyalty Scale:** From 20 items originally developed to measure loyalty to preferred brand of bathing soap after the product variation manipulations had been effected, 15 items were accepted after content validation. These were also structured on the Likert format of Strongly Agree, Agree, No Idea, Disagree and Strongly Disagree. The 15 items were reduced to 12 items after scale item analysis (see Appendix II). The resultant items had item-total correlation ranging between .49 and .84. The reliability coefficients obtained for the scale were .91 for Cronbach alpha, the split-half was .63 with .79 for the Spearman Brown coefficient for the whole scale.

A correlation of $r = .67$; $df = 79$; $p < .01$ was obtained between the pre- and post-manipulation brand loyalty scales, using the responses of pilot study group. This established a significant positive relationship between the two scales, showing that they measured the same construct-(brand loyalty). This also served as alternate form reliability. The total score of a respondent on all the selected 12 items served as the post-manipulation brand loyalty score.
Manipulations of the Independent Variables: By the design of the research (i.e. 3 x 3 x 3 factorial design), 27 manipulations of the independent variables were made by combining the 3 levels of each of the independent variables. Respondents were provided with information that:

"As a result of incessant increase in cost of raw materials and the fluctuation in economy worldwide, manufacturers tend to alter product price, size and quality so as to make profit in the products manufactured."

Following this was the message, which actually conveyed the manipulation of the independent variables, thus:

"Assuming the manufacturer of the brand of your bathing soap now decides to increase price by 5%, reduce product size by 5% and reduce product quality by 5%, following increased cost of production. Indicate your reaction to such changes as you respond to the items below."

Respondents were then expected to respond to the post-manipulation brand loyalty scale. Other manipulations had all other information with exception of the actual message on the manipulated variables that was varied to suit each experimental group.

However, a manipulative check was conducted to ascertain if the manipulations made were actually effective and perceived by the respondents as intended. To this effect, the respondents in the pilot group were presented with a three item scale to assess the extent to which they perceived the change in product price, size, and quality respectively, using an 11-point rating scale (see Appendix III) ranging from minor to major. Each item measured each product variation. The responses of the respondents were collated for each type of product variation. Thus, by the 3 x 3 x 3 factorial design, from the 81 respondents in the pilot group 27 received each level of the three levels in each product variation; the other two variations were held constant. Analyses of these date showed significant effects of the manipulations on respondents' perception of the product variations.

The one-way analysis of variance (ANOVA) statistic was computed for each of the product variations. There were significant differences in the respondents' perception of the manipulations in price (F (2,78) = 5.62; p < .01, size (F (2,78) = 4.81; p < .01, and quality (F (2,78) = 7.03; p < .01. The least significant difference (LSD) multiple comparison statistic used to compare the means of the three levels in each product variations further proved that the perceptual differences in the product variations levels were in the direction of variation levels created.
**Procedure**

A pilot study was first carried out to validate the scales developed for the study. Ten experts were involved for the content validity; they were drawn from psychology and economics lecturers at the University of Ibadan. These were lecturers who teach courses related to marketing and consumer behavior. They were instructed to rate each item in the pre- and post-manipulation brand loyalty scales and indicate the extent to which they agree that the items actually measure what the respective scales purport to measure. A 5-point response pattern of strongly agree to strongly disagree was provided. The average ratings of the experts on each of the items were computed and only items having an average of above 3 were accepted as valid. The norm of 3 was chosen for acceptance because scores of 3 and below suggest unfavorable response and therefore rejection of item. Twenty (20) items were initially generated each for the pre- and post-manipulation brand loyalty scales. After content validation by the experts, 13 items were retained for the pre-manipulation brand loyalty scale while 15 items emerged for the post-manipulation brand loyalty scale.

The emergent scales were administered on eighty-one (81) respondents drawn from the population of the study, but among those not originally selected for the main study. Their responses were used to analyze the item-total correlation and reliability of the scales, as well as the manipulative checks for the independent variables. Three of these were randomly assigned to a group to receive each of the 27 treatments.

For the main study, the 270 randomly selected students were randomly placed into 27 groups of 6 males and 4 females. Each group was randomly assigned to the manipulations created, which enabled the researcher note the treatment condition for each participant. The university matriculation number of each student was used to place him or her in a large lecture theatre that was used for the study. They were seated in such a way that allowed only the researcher and 2 research assistants to know were each experimental group participants were. This facilitated the administration of the questionnaires used for the study.

The instruments for the study were collated to make a questionnaire with information on participants’ identity like gender, age, most preferred brand of bathing soap, how long they have been using it, whether they use other brands of bathing soap along with their preferred brand and whether they will likely use other brands of bathing soap soonest. Another section contained the pre-manipulation brand loyalty scale, while a third section contained the experimental manipulations and the post-manipulation brand loyalty scale. Thus, there were a total of 27 sets of questionnaires. Respondents were instructed to submit their questionnaires on completion. It took an average of 15 minutes to complete each questionnaire, after which each was returned.
Results

In testing the four hypotheses stated, a $3 \times 3 \times 3$ analysis of covariance (ANCOVA) was employed to determine the main and interaction effects of product variations on brand loyalty. The pre-manipulation brand loyalty scores were used as the covariate because they correlated significantly with the post-manipulation brand loyalty scores ($r = .33; df = 268; p < .01$). The results of the analysis are presented in Table 1. Hypotheses 1 and 2 were not confirmed as the results showed no significant effects of price ($F (2,242) = 1.22; P \text{ ns}$) and size variations ($F (2,242) = .56; P \text{ ns}$) on brand loyalty. However, the main effect of product quality on brand loyalty was significant ($F (2,242) = 12.48; P < .001$). Consequently, the least significant difference (LSD) test was used as a multiple comparison analysis to test for the direction of the significant effect.

Table 1: $3 \times 3 \times 3$ ANCOVA Showing the Main and Interaction Effects of Product Variations on Brand Loyalty

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covariate</td>
<td>2653.93</td>
<td>1</td>
<td>2653.93</td>
<td>38.60</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Price</td>
<td>167.58</td>
<td>2</td>
<td>83.79</td>
<td>1.22</td>
<td>ns</td>
</tr>
<tr>
<td>Size</td>
<td>78.14</td>
<td>2</td>
<td>39.07</td>
<td>.56</td>
<td>ns</td>
</tr>
<tr>
<td>Quality</td>
<td>1717.03</td>
<td>2</td>
<td>858.51</td>
<td>12.48</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Price X Size</td>
<td>96.85</td>
<td>4</td>
<td>24.21</td>
<td>.35</td>
<td>ns</td>
</tr>
<tr>
<td>Price x Quality</td>
<td>536.46</td>
<td>4</td>
<td>134.11</td>
<td>1.91</td>
<td>ns</td>
</tr>
<tr>
<td>Size x Quality</td>
<td>157.24</td>
<td>4</td>
<td>39.31</td>
<td>.57</td>
<td>ns</td>
</tr>
<tr>
<td>Price x Size x Quality</td>
<td>1710.68</td>
<td>8</td>
<td>213.84</td>
<td>3.11</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Error</td>
<td>16636.13</td>
<td>242</td>
<td>68.74</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results of the multiple comparison analysis are presented in Table 2. The results show that brand loyalty at constant quality condition (Mean = 44.29) was significantly higher than that under 5% quality reduction (Mean = 40.25) and 20% quality reduction (Mean = 38.42). Thus, the third hypothesis was accepted. Nonetheless, there was no significant difference on brand loyalty between 5% quality reduction condition and 20% reduction condition.
Table 2: LSD Multiple Comparison Showing the Effects of Quality on brand Loyalty

<table>
<thead>
<tr>
<th>Quality</th>
<th>5% Reduction</th>
<th>20% Reduction</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 5% Reduction</td>
<td>-</td>
<td>-</td>
<td>40.25</td>
</tr>
<tr>
<td>2. 20% Reduction</td>
<td>1.83</td>
<td>-</td>
<td>38.42</td>
</tr>
<tr>
<td>3. Constant</td>
<td>4.04*</td>
<td>5.87*</td>
<td>44.29</td>
</tr>
</tbody>
</table>

*p<.05

Table 3: LSD Multiple Comparison Test of Levels of Product variations on Brand Loyalty

<table>
<thead>
<tr>
<th>Quality change</th>
<th>Levels</th>
<th>P1S1</th>
<th>P1S2</th>
<th>P1S3</th>
<th>P2S1</th>
<th>P2S2</th>
<th>P2S3</th>
<th>P3S1</th>
<th>P3S2</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>5% Reduction</td>
<td>1. P1S1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2. P1S2</td>
<td>1.16</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>3. P1S3</td>
<td>6.86*</td>
<td>5.70</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>4. P2S1</td>
<td>7.06*</td>
<td>5.90</td>
<td>-1.09</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td></td>
<td>5. P2S2</td>
<td>5.00</td>
<td>3.84</td>
<td>6.74*</td>
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<td>-</td>
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<td></td>
<td>6. P2S3</td>
<td>0.12</td>
<td>10.40*</td>
<td>0.37</td>
<td>6.94*</td>
<td>4.88</td>
<td>-</td>
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<td></td>
<td>7. P3S1</td>
<td>7.23*</td>
<td>6.07</td>
<td>5.57</td>
<td>7.11*</td>
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<td>7.11*</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>8. P3S2</td>
<td>1.29</td>
<td>0.13</td>
<td>5.48</td>
<td>5.77</td>
<td>3.71</td>
<td>1.17</td>
<td>5.94</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>9. P3S3</td>
<td>1.38</td>
<td>0.22</td>
<td>5.57</td>
<td>5.68</td>
<td>3.62</td>
<td>1.26</td>
<td>5.85</td>
<td>0.09</td>
<td>42.18</td>
</tr>
<tr>
<td>20% Reduction</td>
<td>1. P1S1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2. P1S2</td>
<td>2.09</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
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<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td></td>
<td>4. P2S1</td>
<td>1.70</td>
<td>0.39</td>
<td>0.77</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>5. P2S2</td>
<td>8.56*</td>
<td>6.47*</td>
<td>7.63*</td>
<td>6.86*</td>
<td>-</td>
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*p < .05

P1- 5% price increase  P2- 20% price increase  P3- constant price
S1- 5% size reduction  S2- 20% size reduction  S3- constant size

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While none of the 2-way interaction effects was significant, the results of the 3-way interaction was significant, showing significant interaction effects of product price, size and quality variations on customers’ brand loyalty (F(8,242) = 3.11; p < .001). The results of the LSD multiple comparison test show that with 5% reduction in product quality, loyalty was best at 5% price increase and 5% size reduction (Mean = 43.56). At 20% quality reduction, loyalty was best at constant price and 20% reduction in product size (Mean = 42.45). At constant quality, loyalty was best at constant price and 5% size reduction (Mean = 49.86), although this was not significantly different from consumers’ brand loyalty when constant quality was combined with constant price and 20% size reduction (Mean = 44.33), 5% price increase and constant size (Mean = 46.55), 20% price increase and constant size (Mean = 45.56), and 20% price increase and 5% size reduction (Mean = 48.33).

**Discussion**

It has been discovered that for the Nigerian market, variations of product characteristics is inevitable as the manufacturers keep on depending too much on imported raw materials for production, coupled with the high exchange rate. Where raw materials are locally made the scramble for the scarce materials make it elusive for production cost not to be on the increase. Manufacturers, on the other hand, are profit oriented and would invariably want to optimize or maximize profit by varying products attributes at production or sales point. Hence, products quality or size could be altered to attract profit, or the price varied to achieve same purpose. But the problem encountered is which of these, or a combination of these could be made for customer loyalty to still be gained?

The findings from the present study show that varying product price or size might not necessarily affect customers’ loyalty but quality variation would. More specifically, reducing the quality of a product in response to increased cost of production could lead to loss of customers, as they would become disloyal to an initial favored product brand. This finding seems to confirm Ehigie and Ramon’s (1994) findings of Nigerians’ value for product quality, and also supported by Nwamadi (1998).

The present finding might have been obtained because the product in context (bathing soap) is a health related one. Consumers would always want to protect their skin with the brand of soap they discovered is favorable to their skin and would therefore not want to compromise quality, but would rather tolerate increase in buying cost or reduction in size of the product.
other words, consumers could tolerate price increase or size decrease of a favored soap brand in situations of increased cost of production, but not quality reduction. To a large extent, we know what to do and what not to do to promote good health and to avoid disease and injury (Brehm & Kassin, 1996). It is evident from the present study that what consumers would do to promote good health of their skin is to consistently buy a soap brand that maintains its tested quality level and avoid any that portrays threat to its quality. Also, they could accept such product if price is increased or size is reduced, so far there is no threat to its quality.

This proposition might be explained with Engel et al’s (1978) model of individual buying decision, which identified consumer needs as determinants of how product features are evaluated. The need for bathing soap is to clean the skin and it is the perceived quality of soap that would gratify such need, not necessarily its price nor size. This could explain why quality variation was significant in the present study, in influencing consumer brand loyalty.

By the theories of prevention (Weinstein, 1993), consumers engage in cost-benefit analysis. That is, consumers would consider the benefits of owning a particular brand of product as against not owning it, or owning an alternative brand of product. In the present context, consumers would have considered what it would cost them in owning a less quality soap, in terms of threat to the health of their skin. Thus, even at increased price or reduced size they would be more loyal to their soap brand, as opposed to when the quality is reduced. Brehm and Kassin (1996) opined that the first step toward good health depends on the relative pleasure to be derived from healthy versus unhealthy behaviors. If healthy behavior is more enjoyable than an unhealthy one, then it will be tried. This is exactly what might have made the consumers in the present study to opt for quality soap and not soap of reduced quality. This is the cost-benefit of buying a quality or less quality soap.

As rational decision makers (Vroom, 1964), consumers analyze the cost and benefits of each product feature and take actions that would lead to desirable outcome. In the present case, the consumers would have critically considered the variations in the three product features and believed that reduction in the quality of their favored brand soap is an undesirable option or outcome. This explains why brand loyalty was best when constant quality was combined with constant price and 5% reduction in size. However, because consumers would tolerate change in other product features except quality, brand loyalty at constant quality combined with constant price and 5% reduction in size was not significantly better than brand loyalty at constant quality combined with constant price and 20% reduction in size, 5% price increase and constant size, 20% price increase and 5% size reduction and, 20% price rise and 5% size reduction. Thus, all that consumers are after in advent of in-
creased cost of product is at least maintenance of product quality, even if price increases or size reduces.

Put succinctly, consumers would have mentally processed the cost of paying more, buying a smaller soap at same cost, and reduced product quality and might have reasoned not to forgo quality because of the benefits of protecting the skin. Thus, the consumers tried to reduce risks or increase protections of the skin (Coie, Watt, West, Hawkins, Asarnow, Markham, Ramey, Shure, & Long, 1993), by choosing not to forgo quality. By inference, consumers see quality reduction as threat to brand image due to increase in perceived risk (Berkman et al, 1997) of buying a product brand of less quality.

Invariably, the consumers in the present study were subjected to a multiple avoidance-avoidance conflict (Ehigie, 2000) settings. This is because they were to make buying judgments under three negative buying conditions of reduced product quality, increased product price and reduced product size. They however resolved the conflict by choosing to be loyal to the brand, whose quality has not changed, but the size might have been reduced and price increased. While the consumers would not have attached much importance to price or size variations, they would have highly considered reduction in product quality as quite unpleasurable and unbearable, going by the opponent-process theory of consumer motivation (Ehigie & Babalola, 1995). The theory explains that consumers would go for product brands that will give them pleasure and avoid those that will give them pain. Thus, being loyal to the soap brand of guaranteed quality, even at increased cost or reduced size might have averted the pain of unhealthy skin.

The theory of the mediating effect of emotions on product features and attitude to brand (Izard et al’s (1984) emphasized the role of consumer’s emotions in determining how product features would affect behavior. The emotional responses evoked by increases in price and decreases in size are not significant in affecting brand loyalty, but reduction in product quality does. Thus, product quality should be maintained in the Nigerian market. This implies that price and product size could be altered but product quality should be maintained, if not improved.

The fact that consumers are less bothered with price increase and product size reduction, resulting from increased cost of production, confirms that consumers are fair in their dealings with their manufacturers. According to the equity theory (Adams, 1965), if a person feels overpaid or underpaid, distress would be experienced. Considering the buying context in the present study, that of increased cost of production, the consumers can be said to be ready to pay higher or purchase smaller product but with constant quality, as a way of balancing the input/outcome ratio. By agreeing to some variations in the characteristics of their preferred soap in terms of increased cost and reduced size, at increased cost of production, it is a way of not feeling being “overpaid” or
exploiting the manufacturer. The outcome of the results, however, suggests that with reduced quality they could feel "underpaid" or being exploited and thus, become disloyal to the brand.

Although the results in the present study show that the independent effects of price and size on brand loyalty were not significant, but the interaction effect of price, size, and quality on brand loyalty was significant. This seems to confirm the views of Berkman et al. (1997) that price variation alone would not be significant in influencing consumers except when used in conjunction with other product mixes. It therefore suggests that if manufacturers must alter their product's price, size, or quality in reaction to increased cost of product, price might be increased and size reduced, but these must be carefully done with product quality put into consideration.

In the non-compensatory consumer decision rules by Wilkie and Edgar (1973), it is explained that in selecting brands from among several purchase alternatives, the consumer established minimum acceptable levels for each characteristic and unless a product exceeds all these minima it is rejected. In other words, every characteristic of each brand alternative is considered against set minimum standards. In the present study, it could be inferred that consumers would have considered reduction in product quality as falling below expected minimum standard for the acceptance of bathing soap. But the increase in price or reduction in size, at increased cost of production, was acceptable as above expected minimum standards for acceptance. This explains why quality variation significantly affected consumer brand loyalty, as against variation in price or size. And the strength hoped to be gained by maintaining price and brand size at increased cost of production were not strong enough to influence consumer loyalty. This is because as consumers were aware that cost of production has increased and they are now being told that the price and size are still maintained, the quality of the product would be in doubt.

Manufacturers in the Nigerian market are therefore advised not to alter quality in advent of increased cost of production, but price could be increased and size reduced along with constant product quality. If the price is to be maintained then size could be reduced slightly or considerably and vice versa if size is to be maintained. Thus, price and size occupy equal status in gaining customers' brand loyalty.

The present study, however, has some limitations among which is the fact that this was a laboratory experiment and not real representations of what might be obtained in real life setting. Also only a single product was considered in the study, which is health related. Future researchers could consider other products in real life settings and also measure issues that would better explain consumers' brand loyalty behavior. The present study was also not designed to measure and compare pre- and post-manipulation brand loyalty scores, future researchers might consider this.
References


APPENDIX I: Pre-Manipulation Brand Loyalty Scale

INSTRUCTION: Please indicate your responses to each of the items below, in relation to your current preferred brand of bathing soap. Follow the response guide below:

Strongly Agree (SA), Agree (A), No Idea (N), Disagree (D), and Strongly Disagree (SD):

1. I am very particular about the kind of bathing soap I use.
2. I am always confident of my bathing soap brand judgment.
3. Though I am used to this brand I can still stop buying it.
4. I have used more than one brand of bathing soap in the past three months.
5. If I end up buying another brand of bathing soap it will satisfy me like the one I presently use.
6. I usually purchase a newly introduced bathing soap when there is a raffle ticket in the packet.
7. I will not be reluctant to buy another preferred brand of bathing soap if my choice brand of soap is not available in the market.
8. My brand of bathing soap is the best in the market.
9. In the case of price increase on my choice bathing soap brand, I will still purchase it.
10. In the case of price decrease on my choice bathing soap brand, I will still purchase it.
11. My brand of bathing soap is of high quality.
12. I derive maximum satisfaction from the present brand of bathing soap I use.
13. I believe in storing my brand in case of scarcity.

* Items were excluded because of low item-total correlation

N/B: Items 3, 4, 5, 6, and 7 were revised in scoring

APPENDIX II: Post-Manipulation Brand Loyalty Scale

INSTRUCTION: As a result of incessant increase in cost of raw materials and the fluctuation in economy worldwide, manufacturers tend to alter product price, size and quality so as to make profit in the products manufactured. Assuming the manufacturer of your brand of bathing soap now decides to increase price by 20%, reduce product size by 5%, and reduce product quality by 5%, following the increased cost of production.

Indicate your reactions to such changes as you respond to the items below:

1. I will influence others to buy the soap
2. I will discourage present users from buying the soap
3. I will introduce this brand of soap to others.
4. I will still buy my brand of bathing soap.
5. I will switch to other brand of soap
6. I will influence others to use the brand of soap.
7. I will advise all buyers of the brand to still accept the product brand.
*8. I will discourage present users from using the brand of soap.
9. I will love to listen to the advert of the soap brand.
10. I will love to read any information about the soap brand.
11. I will love to hear the advert of the soap brand in the radio.
12. I will no longer like seeing the advert of the soap brand on the television.
*13. I will like to buy the soap brand as a gift to my friends
*14. I will like to know the resultant effect of the soap before subsequent buying.
*15. I will love to see the resultant outcome of the soap immediately.

- Items excluded because of low item-total correlation
  N/B:- Items 2, 5, 8, 12, 14, and 15 were reversed in scoring

APPENDIX III: Manipulative Check Scale for the Independent Variables

INSTRUCTION: Considering the changes proposed as reactions to increased cost of production of your preferred brand of bathing soap, how will you react to these changes? Give your responses by circling the number along the continuum of Minor – Major change, that best corresponds to your feelings.

PRICE CHANGE:  Minor 0 1 2 3 4 5 6 7 8 9 10  Major
SIZE CHANGE:  Minor 0 1 2 3 4 5 6 7 8 9 10  Major
QUALITY CHANGE:  Minor 0 1 2 3 4 5 6 7 8 9 10  Major