ANALYSIS AND MODELLING OF BRAND EQUITY DATA TO PREDICT THE SUCCESS OF A BUSINESS

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Abstract
Most firms are profit-oriented instead of creating values for their customers. However, with the struggle for market leadership, firms have come to realize that building brand equity is very important to gain sustained competitive advantage for products in the market. Studies that focus on brand equity simultaneously as influencer of a firm’s performance have research gap. This research was carried out to fill this knowledge gap. Brand equity data is used to predict the total revenue and the rate of return on investment in order to draw meaningful conclusions between the marketing activities on a firm’s products and the success of the firm’s business. The results of the analysis revealed that brand equity does contribute to the success of a business but the significance of such contribution is low. It was observed that product quality goes a long way to promote and strengthen brand equity. The researchers believe that this kind of measure is consistent with the interpretation of customers’ behavior and it is in accordance with the measurement of consumer-based brand equity especially in the case of commodity products in Nigeria.

Keywords: brand, marketing, performance, analysis, customers

INTRODUCTION
Brand equity is foremost and amongst the most valuable but intangible marketing assets a firm can have. Over the years, the need to measure the impact of marketing is intensified as firms feel the increasing pressure to justify their marketing expenditures, and to be more accountable for showing how marketing activities link to shareholder value. According to [VanWaterschoot and Van den Bulte 1992] “It is important to know that marketing activities such as packaging, brand name, density of the distribution channel, advertising, permanent exhibitions, sponsoring, press bulletins, among others can help build long term assets or positions such as brand equity”. Also factors that determine the essence of a firm’s dynamic capabilities are the organizational processes where capabilities are embedded, and the position the firm has gained (for example, assets endowment) from this perspective. The marketing factors that determine whether the firm has a competitive edge comes from the marketing assets such as customer satisfaction and brand equity (i.e. the marketing positions it has generated). Due to the necessity in today’s market place to develop, maintain and use product branding to acquire a certain level of competitive advantage, many researchers have been interested in the concept and measurement of brand equity. The study of brand equity can be approached from two perspectives; from the perspective of the consumer and from the perspective of the firm. Studying brand equity from the perspective of the firm generally involves the use of observed market data to assess the brand’s financial value to the firm.

In a marketing environment contemporary marketers have to face some challenging situation that the new business environment brings with it. One of them is the evolution of the business atmosphere from mass production [Arthur 1996] to the positive feedback economy known as the increasing returns [Arthur 1990], as well as that of knowledge processing. The aspect of increasing return has to do with the operational level that marketing takes up in the organization [Ambler 2000], while knowledge processing has to do with the rising importance of short term profits to the board and top management [Webster et al 2003]. In order for management to determine how to improve performance the market has to be studied, particularly the customers reaction to the firms product. Yet a majority of firms do not follow this logic. Marketing managers have to develop tools to quantify marketing contribution to the firm’s growth and profitability. Brand equity is a relevant aspect of marketing that contributes to the firm’s success or profitability. This is because it assists the marketing manager to study the market and give the firm an idea of how profits are generated. This ultimately leads to the firm’s growth. Empirical research on the link between marketing assets (or positions) and the firm’s performance have been done in the past, but studies that focus on brand equity simultaneously as influencer of a firm’s performance has a research gap. The purpose of the research is to examine if marketing activities on particular brand can be used to determine brand performance, and also whether business success can be measured based on the relationships between brand equity and brand performance. These relationships are examined in five different products of the same category and from three different companies, which constitute the major markets in Nigeria. Specifically, the purpose of this research is to determine whether there is a positive relationship between brand equity and a firm’s success. The objectives of this work are meant to provide answers to certain questions. 1. What are the effects of marketing activities (such as advertising) on marketing asset (Brand Equity)? 2. Do marketing activities of the firm affect its success? 3. Does marketing assets have effects on the profitability of the firm? (4) To what extent does brand equity contribute to the success of a firm?
“The only value a company creates is the value that comes from customers.” (Kotler et al 2006). This can be attributed to the reason why brands that have strong equity succeed more than brands that create mere satisfaction. Customer’s choices are made on the marketing offer that gives them the most values. They buy from the firms that offer the highest value, thereby making value creation an important issue in satisfying customers need since customers usually base their judgments on the value of marketing offered to them. Most times their expectation is based on their past buying experiences, friends and associates opinion, marketers and competitor information and promises. For marketers to succeed, they must be able to identify the right level of expectations because if the expectations are low they are likely to satisfy only a few buyers. Again, if high expectations and delivering performance do not match they are also likely to be disappointed.

Brand equity is the positive differential effects by customers/clients on products; the effects that knowing the brand name have on the customer response to the product or services. In order for customers to respond positively to a product, it must have higher brand loyalty, name awareness, perceived quality, strong brand association and other assets such as trademarks patents and channel relationship. This research was motivated by hypothesis that predicts the possible influence of brand equity as a situational variable that guarantees profitability/success in a business.

The following hypothesis is given:

“Brand Equity in Major Market does Guaranty success in Nigerian Market”.

The alternative hypothesis in case the original hypothesis proves to be wrong is:

“Brand Equity in major Market does not guaranty Success in the Nigerian Market”.

METHODOLOGY

The approach adopted in order to prove the hypothesis is to collect useful data from the firm’s marketing activities. Table 1: Brand Categories and Manufacturers

<table>
<thead>
<tr>
<th>Product Category</th>
<th>Brand</th>
<th>Brewer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Larger Beer</td>
<td>Star</td>
<td>Nigerian Breweries Plc</td>
</tr>
<tr>
<td></td>
<td>Gulder</td>
<td>Guinness Plc</td>
</tr>
<tr>
<td></td>
<td>Heineken</td>
<td>Nigerian Breweries Plc</td>
</tr>
<tr>
<td></td>
<td>Legend</td>
<td>Nigerian Bottling Company Plc</td>
</tr>
<tr>
<td></td>
<td>&quot;33&quot;</td>
<td>Consolidated Breweries Plc</td>
</tr>
<tr>
<td></td>
<td>Wilfort</td>
<td>Sona Breweries Plc</td>
</tr>
</tbody>
</table>

The research study is based on the six lager beer products Star, Harp, Gulder, “33”, Legend and Heineken. These brands represent over 90% market share in the lager beer category of drinks in Nigeria.

Marketing Activities

Measuring the impact of marketing is based on the evaluations of some type of attitudinal analysis. This study assumes that customers’ attitudes and opinions lead directly to desired behaviors. Marketing campaigns need to be able to quantify visible, measurable actions by the customer or prospect. Some marketing activities of NB Plc in recent times are viewed as important and consistent with the firm’ marketing campaign. These activities are included in the design of questionnaire to include: TV, Radio & Print Advertisement, TV Reality Shows, Event /Sport Sponsorship, Promo Donations / Gift Items, Social media network (Face book, Twitter, etc.), and One-to-one contacts.

Consumers Behaviour and Brand Performance

In this study, a quantitative assessment of customer perception is linked to purchasing behavior using the
brand performance metrics to determine the financial profitability of each brand on a relative basis. The marketing activities of firm’s products may have significant contributions to the perceived attitudes of customers. Customers’ attitude can be derived from how customers perceive the products and their feelings on them. Changes can occur over time on the attitudes of consumers. While these changes can be used to model the process of evaluating customers’ behavior, its attributes cannot be good enough to measure the performance of products in the marketplace. Brand performance requires analysis of customers’ behaviour over certain product. Each attribute of band performance has a form of economic implications on the product. The quantitative phase of a brand equity market research study is designed to measure selected attributes from Aaker’s Brand Equity Ten. These attributes were tracked separately based on Aaker’s recommendation

Table 3: The attributes of brand equity and the factors responsible for the success of a business

<table>
<thead>
<tr>
<th>Marketing activities</th>
<th>Marketing campaigns</th>
<th>Brand perception</th>
<th>Brand performance</th>
<th>Financial report</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV, Radio &amp; Print Advertisement</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>TV Reality Shows</td>
<td></td>
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<tr>
<td>Event/ Sport Sponsorship</td>
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<tr>
<td>Promos</td>
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<tr>
<td>Donations/Gift Items</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Social media network (Face book, Twitter, etc.)</td>
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<td></td>
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<tr>
<td>One to one contact</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>• Effect level</td>
<td>• Effect level</td>
<td>• brand awareness</td>
<td>• Customers satisfaction</td>
<td>• Current</td>
</tr>
<tr>
<td>• Campaign Effectiveness</td>
<td>• Campaign Effectiveness</td>
<td>• Customers preference</td>
<td>• Price premium</td>
<td>• Assets liabilities turnover</td>
</tr>
<tr>
<td>• Campaign Results</td>
<td>• Customer affinity</td>
<td>• Brand quality</td>
<td>• Loyalty</td>
<td>• Debt/Equity Ratio</td>
</tr>
<tr>
<td>• Customer attitude</td>
<td>• Progress or campaign trends</td>
<td>• Product availability</td>
<td>• Return-on-invest</td>
<td>• Market Share</td>
</tr>
<tr>
<td>• Progress or campaign trends</td>
<td>• Resource usage</td>
<td>• Brand credibility</td>
<td>• Customers purchase Habit</td>
<td>• Return On Sales</td>
</tr>
<tr>
<td>• Resource usage</td>
<td>• Task completion</td>
<td></td>
<td></td>
<td>• Return On Investment</td>
</tr>
<tr>
<td>• Task completion</td>
<td>• Time requirements</td>
<td></td>
<td></td>
<td>• Net Profit</td>
</tr>
<tr>
<td>• Time requirements</td>
<td></td>
<td></td>
<td></td>
<td>• Market Capitalization</td>
</tr>
<tr>
<td>• Knowledge of Product (PK)</td>
<td></td>
<td></td>
<td></td>
<td>• Earnings Per Share</td>
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<tr>
<td>• Effect of Brand Name (BNE)</td>
<td></td>
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<td></td>
<td>• Net-worth</td>
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<tr>
<td>• Brand Quality/Value (BQ)</td>
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<td></td>
<td>• Dividend Yield</td>
</tr>
</tbody>
</table>

DEFINING THE BASIC VARIABLES

The variables used for the study are discussed below:

- **Marketing Activities (MA):** This is the marketing efforts of the company to sell its products to customers. Activities represented in the study comprise of TV, Radio & Print Advertisement, TV Reality Shows, Event /Sport Sponsorship, Promotional activities, Donations / Gift Items, Social media network (Face book, Twitter, etc.), and One-to-one contacts. The combined effects of these activities are studied against the brand performance.

- **Knowledge of Product (KP):** This variable concerns customers’ perception of brands in terms of awareness, familiarity and identification of brand name and image.

- **Effect of Brand Name (BNE):** variable is used to gather respondents’ answers to their actions based on the brand name of the product.

- **Brand Quality/Value (BQ):** It is used as one of the marketing assets alongside Knowledge of product and Effect of Brand Name.

- **Product Patronage (PP):** This variable is used to represent customers purchasing and persistent buying of product. It is also used, in this context, as a measure of the brands market share among other brands of the same category.

- **Brand Equity (BE):** is measured as the average of the mean scores of the Marketing Asset variables (Knowledge of Product (PK), Effect of Brand Name and Product Patronage).

- **Market Revenue (MR)** is a variable that is used to portray the success of business.

- **Business Success:** It was not possible to collect profitability data of each product from the Nigeria Breweries Plc and Guinness Plc. As a result, the study uses market share and average price to compute the associated revenue that represents a measure of how successful a business could be based on the performance of its products in the market place.

- **Market share** is calculated as the percentage of a market accounted for by a product. The Unit market share gives the units sold by each company as a percentage of total market sales, measured in the same units, and is measured below. Market share is calculated as a function of average brand price for each product.

The variables Brand Name Effect, Knowledge of Product and Product Quality are used to represent marketing assets since they all constitute the strength of the brand. Measuring the profitability of each product is not feasible with available data. However, a way round this situation is to measure the likely level of profit a product can yield the firm relative to other products. Here, the price premium is used. By this, the average price is deducted from the price of each product and the Unit Market Share. Every product is multiplied with what is left of the price difference.

RESEARCH DESIGN AND ANALYSIS

Data Collection and Administration

A survey research was designed using structured questionnaire as data collection tool to extract required information from respondents. Such questions were constructed to indicate if brand equity contributes to the success of the firm. The questionnaire was designed to collect data on four areas and from three target audiences: (1) marketing personnel (for data on marketing activities), (2) consumers (for data on customers’ perception and behavior, economic and financial experts for data on economic and financial implications based on the behavior of customers), and (4) finance/audit personnel (for financial reports on each brand represented). Probability (systematic) sampling techniques were employed. The questionnaires were issued out to the marketing staffs of the brewery companies and a group of final consumers. Each of the marketing brand and financial associations has a five item scale i.e. from 0 to 4. For the systematic sampling techniques employed, a total of 232 questionnaires were returned out of 250 that were distributed, 9 questionnaires were either rejected, or unusable due to incomplete responses because respondents could not notice the said attributes, or the questionnaires were not returned by the respondents. 223 usable questionnaires were returned representing 89.2% response rate. The incomplete
questionnaires were discarded to avoid misleading results.

ANALYSIS AND INTERPRETATION OF DATA
Linear regression of brand equity as a function of marketing activities is calculated for each product in order to test if apparent changes were significant. The analyses of the hypotheses follow. For summarization, the mean scores for knowledge and quality are calculated for each attribute and for each brand.

H1. Marketing activities have significant effect on marketing asset in the breweries industries in Nigeria. Using Table 8 the values of $R^2$, constant ($a$), and coefficients associated with Brand Equity and Marketing Activities are obtained with their respective standard errors and values of $p$. Values of $R$ and $R^2$ are .886 and .786 respectively. Value of $b$ is positive and significant (.045), showing that for these products brand equity increased significantly with increases in marketing activities.

H2: Marketing activities of the firm affect business success
Increase in marketing assets increases the total revenue which in this context is to represent the profitability of the business.

Unit market share (%) = 100 * Unit sales (#) / Total Market Unit Sales (#)

H3: Marketing asset does have an effect on the profitability of the firm
The product of these variables gives an estimate of Return on Sales which is one of the financial metrics that can be used to determine the success of business.

Return on Sales (based on Brand difference) = Unit Sales * (Price Premium – Least Price)

The Correlations part of the output shows the correlation coefficients. This output is organized differently than the output from the correlation procedure. The correlation between Return_on_Sales and Brand_Name_Effect, Knowledge_of_Product, and Product_Quality are .751, .764 and .853 respectively. The three independent variables considered, Product_Quality have significant contributions to return on sales and can serve as significant predictors for return on sale variable.
H4: Brand equity contribute less significantly to the success of a firm

The Model Summary table provides the R value as 0.854 and $R^2$ as 0.729 values, which represent the simple correlation and, therefore, indicates a high degree of correlation. The $R^2$ value indicates how much of business success (now in terms of Return on Sales) can be explained from brand equity. In this case, 72.9% can be explained, which is very large.

The ANOVA table indicates that the regression model predicts the outcome variable significantly well. The Sig. column indicates the statistical significance of the regression model that was applied. Here, $P = 0.0005$ which is less than 0.05 and indicates that, overall, the model applied is significantly good enough in predicting the outcome variable. Both the constant and brand equity variables contribute less significantly to the model (by looking at the Sig. column). Significant variables are shown below:

- Adjusted R square = .729; $F = .695, p > 0.05$ (using the Enter method).

Predictor Variable Beta $p$

Standardized Brand Equity score: .020, -.9.061, and .891 $p > 0.05$

The hypothesis is true.

From the Unstandardized Coefficients column, it can be presented that the regression equation is:

\[ \text{Return-on-sale} = 8.92 \times \text{Product Quality} - 0.515 \times \text{Knowledge of Product} + 0.290 \times \text{Brand Name Effect} - 14.936 \]

**RESULTS**

Marketing assets contribute significantly and positively to the return on sale and by extension to the profitability of the business. The coefficient of success on a product may differ from product to product of the same category. Other factors such as how readily available are the products to consumers, the price premium and some social factors may have significant impact on the financial success of a product. Product availability is a crucial factor in this sense especially in situations where readily-available products can be substituted for the required product.
The results of the analysis reveal that brand equity does contribute to the success of a business but the significance of this contribution is very low. As can be seen from the result, sig. = .632 which is higher than 0.05. It could be noted that certain metrics of brand equity such as the quality of the product has higher contribution to return on sales than others. It further reveals that having the knowledge of the product or knowing the brand name by consumers is good but it may not automatically affect the company’s success.

CONCLUSION

While it is observed that brand equity has positive contributions towards the success of a business, it generally cannot be used as the sole determining factor. In this case, other attributes of products come into play. Comparing the products investigated here, it is apparent that Heineken and Gulder are much more brandable in Nigeria than “33” and Harp. Heineken is priced much more than Gulder but still with high brand value; hence its level of success based on return on sales is much, much higher compared to Gulder’s. This is interpreted to mean that Heineken has strong brand performance which results in high rate of acceptance by consumers such that despite its high price, it is highly patronized by buyers. It may be argued that low quality product will benefits well from marketing, however, it will not take long before it is discovered, causing great drop on sales volume. Example of such product in this study is “33” which despite

Fig. 2: Measurement of business success using return on sales estimates

Results also indicate that no guarantee can be deduced on the success level of the products by inferring the hypothesis from the brand equity point of view. In this case, the original hypothesis has been proved to be wrong and hence the alternative hypothesis holds: “Brand equity in major market does guaranty success in the Nigerian market, but significance of such contribution is low”.

From the results obtained, one can easily discover the relevance of marketing activities on the success of a firm. All efforts on marketing of a product have positive impact on the success of the business. However, these efforts have small contributions on business achievements especially if the product quality is poor. The success of the business becomes determinable from all marketing campaigns if there is appreciable increase in the quality of the product.
marketing efforts could not yield higher sale than others. In the case of Gulder with the highest quality among the brand products considered in this research, it was lagged by Heineken due to Heineken’s higher sales volume. Traditionally in Nigeria, Gulder has always been regarded as the beer of high quality – the fact that is also supported by this work. Some managerial implications of this study are discussed. Firstly, it may not be a good decision to expend lots of marketing efforts on products of low quality. Taken together, such results demonstrate that the relationships between consumer-based brand equity and business success depend upon the context in which they occur. This corroborates the argument in favor of emphasizing the influence of price variable, availability and widespread distribution.

REFERENCES


