The Impact of Supply Chain Integrity on Customer Based Brand Equity: The Case of Seed Co Limited (Zimbabwe).

Munyaradzi Mutsikiwa  
Great Zimbabwe University  
Box 1235 Masvingo  
Zimbabwe  263773206114  
E-mail: munyamutsikiwa@gmail.com

Jonatan Muzangwa  
Great Zimbabwe University  
E-mail: jonamuz@gmail.com

Clay Hutama Basera  
Great Zimbabwe University  
E-mail: cbasera@gmail.com

ABSTRACT

Businesses are becoming increasingly aware of the serious reputational and brand damage that can result from non-performing products that emanate from counterfeits in a poorly managed supply chain. For any business to survive and sustain its competitive edge it should protect its supply chain integrity. Supply chain integrity plays a significant role in building and maintaining the brand equity of a company’s products. This paper looks at how supply chain integrity impacts on brand equity of the Seed Co’s maize brand.

Key terms: Supply chain, supply chain management, supply chain integrity, brand, brand equity.

1. INTRODUCTION

Seed Co Limited is a Zimbabwe-based holding company that is involved in the manufacture of seeds. The Company’s product portfolio is comprised of: maize, soya beans, groundnuts, sorghum, sugar beans and peas among others. The company is also active in Zambia, Kenya, Botswana and Malawi, where the company has operational units or supplies seed. However in this study only the distribution of maize seeds is examined. According to Tripp (1998) seeds constitute one of the most important components of technology that contributes towards the improvement of agricultural productivity. Maize seeds are one of the most important resources of farmers and due to various exchange and drop-off points in the supply chain it is important to ensure that an authentic product gets to the final consumer. They are a source of food and have a greatest socio-economic impact on the welfare of a nation.

The growing problem of counterfeiting has threatened seed companies and consumers in every region of the country. Fake seeds deprive legitimate companies of revenues and undermine consumer confidence in brand names. The damage affects both brand equity and farmers (consumers) who are deceived into purchasing and planting fake maize seeds that do not meet the brand owners’ standards and this reduces yields per hectare significantly. It has been acknowledged that increased farm productivity and customers’ loyalty to the Seed Co brand can only be possible when high yielding varieties of seeds get to end-consumers. This can be attained when efficiency of the distribution systems is put in place to ensure that seeds reach the farmers on time and when the supply chain delivers the brand’s purported value to the end-consumer.
Companies are required to increase their supply chain integrity efforts and communicate their expectations, standards, values to their suppliers and intermediaries. It is essential that firms better manage their supply chains so that they can control the supply and demand side of their products. The success of any firm's business hinges on the development of innovative supply chain strategies. Therefore it is imperative that a firm should put in place a supply chain which is responsive to the transforming business environment. It is the purpose of this study to look at how the supply chain members of Seed Co have contributed towards the company's maize seed brand equity.

2. LITERATURE REVIEW

2.1 Supply chain

The concept of supply chain emerged some three decades ago as a consequence of rising costs, shorter product life cycles and increased customer expectations. The major objectives of supply chain were to reduce costs, improve service levels, satisfy customer needs, maintain a sustainable competitive edge and maximise on supply chain surplus which could only be attained when the supply chain is effectively and efficiently managed. It was also an approach that was employed to minimise disruptions in the supply chain that would reduce a company's revenue, threaten production and distribution and cut into a company's market share. (Chopra and Meindl, 2010; Shah, 2009 and Jonnson, 2008).

According to Chopra and Meindl (2010) supply chain is comprised of parties (suppliers, manufacturers, and intermediaries) that participate either directly or indirectly in meeting the needs of customers. Shah (2009) defines supply chain as the activities that transform raw materials into finished goods or services and making sure that these get to the end customer. The products pass through three major phases namely: the internal supply chain, distribution systems and the final consumer as shown on Figure 1 below.

Figure 1 Seed Co's Supply Chain

Supply chain is not static and it transforms from time to time as organisational circumstances and customer needs change (Chopra and Meindl, 2010).
2.2 Supply chain management

Li et al (2006) propound supply chain management practices as “…as a set of activities undertaken by an organisation to promote effective management of its supply chain and propose five dimensions of supply chain management practices: strategic supply partnership, customer relationship, level of information sharing, and postponement”. Chow et al (2008) compliment the aforementioned practices by adding communication, integration, customer relationship management, supply chain concerns, and specify that these practices are contextual and influence the entire performance of the supply chain. Ganeshan (2007) views supply chain management as a set of approaches employed to effectively and efficiently harmonise the activities of suppliers, manufacturers, warehouses and stores so that the products and services produced are distributed at the right quantities, the right places, and at the right time in order to minimise system costs while meeting the service level requirements.

The primary objective of supply chain management is to manage a network of organisations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of product and services in the hands of the ultimate customer (Chandrasekaran, 2010). Kaufmann (1997) indicates that the purpose of supply chain is to remove communication barriers and eliminate redundancies through the coordinating, monitoring and controlling process. However Ganeshan (2007) feels that the main aim of supply chain management is to be cost effective across the entire system, total system wide costs, from transportation and distribution to inventories of raw materials, work in progress and finished goods are to be minimised. The emphasis is on a systems approach to supply chain management. Brewer and Speh (2000) believe that supply chain objectives are hinged on four dominant pillars namely: waste reduction, time compression, flexible response and cost reduction. Thus it is imperative that an effective and efficient supply chain should meet the financial objectives of all the stakeholders in the supply chain.

Perumal (2006) asserts that an effective supply chain management system is characterised by the following attributes: 1) the ability of the supply chain to support, enhance and sustain a competitive business strategy; 2) the ability to emphasise high performance execution where performance is measured by a balanced set of business-relevant objectives and 3) the sensitivity of the chain to changing customer needs. This demonstrates that the supply chain is a complex and dynamic system that requires a continuous revamp as conditions in the business environment transform.

2.3 Supply chain integrity

A supply chain is inherently complex and manufacturers who sell seeds must consider the impact of the channel on consumers’ perception of their brands. The consumer should receive something that is declared to be or something whole or undiminished (dictionary.com). According to Soppera et al (2007) supply chain integrity “… is the requirement that the system performs the intended function in an unimpaired manner, free from deliberate or inadvertent manipulation”. This entails that the integrity of supply chain is characterised by the absence of tempered products and counterfeits, absence of misplacements and wrong deliveries, and the products should adhere to regulations and ethics. The supply chain should reflect the brand’s purported values and should connect to end consumers in an honest, accountable and transparent manner. This minimises consumers feeling that they are purchasing a lesser quality product.

2.4 Brand equity

Most academics and practitioners have coined many definitions on brand equity. Some authors approach it from a financial perspective (Farquhar, 1989; Kapferer, 2010; Aaker and Biel, 1993), while Keller (2003), Chen, (2001), Chernatony and McDonald (2009) adopt a consumer behaviour oriented perspective of brand equity. Leuthesser (1988) defined brand equity as “…the set of associations and behaviour on the part of a brand’s
customers, channel members and parent Corporation that permits the brand to earn greater volume or greater margins than it could without the brand name and in addition, provides a strong sustainable differential advantage”. In a similar perspective Simon and Sullivan (1993) define brand equity as additional revenues which accrue to branded products or services over and above the revenues generated from the sale of generic products/services. Aaker and Joachimsthaler (2000) define brand equity as assets linked to a brand’s name and symbol that add to or subtract from a product or service. As implied in this definition, the core assets entail brand loyalty, brand awareness, perceived quality, brand associations and other proprietary assets.

2.5 Brand loyalty

Oliver (1999) examines loyalty from a consumer behaviour perspective in which he conceptualises it as a deep commitment to patronise a preferred product or service despite the changes in situational influences and marketing efforts and this ultimately reduces the propensity for customers to switch brands. Aaker (1996) also echoes the same sentiments that loyalty reflects the unlikelihood that customers will switch to another brand even if there is change in price, product features and distribution programs. The American Marketing Association defines loyalty as the situation in which a consumer repeatedly purchases the products or services of the same manufacturer over time as opposed to purchasing from multiple suppliers. Chernatony and McDonald (2009) postulate brand loyalty as a measure of a consumer’s attachment to a specific brand and is a function of several factors such as perceived quality of the brand, its perceived value, its image, the trust placed in the brand and the commitment the consumer feels towards it. Loyalty is essential because committed consumers guarantee future inflows of revenue.

2.6 Brand awareness

Keller (2010) defines brand awareness as “...the customers’ ability to recall and recognise the brand, as reflected by their ability to identify the brand under different conditions”. Brand awareness reflects salience of a brand and facilitates consumers’ abilities to identify brands within a specific brand category (Chernatony and McDonald, 2009).

2.7 Perceived quality

It is an essential brand attribute and can be measured by comparing the brand with its competitors (Chernatony and McDonald, 2009). According to Keller (2010) a brand’s perceived quality is a result of a global customer-centric assessment and perceptions about aspects and dimensions considered relevant for the brand. Perceived quality is a product of the extent to which a brand meets or exceeds performance expectations of the customer. Yoo et al (2000) have a multidimensional perspective of quality which focuses on “...the customer’s judgement about a product’s excellence or superiority, that is different from objective or actual quality, a higher level abstraction rather than a specific attribute of a product, and a judgement is usually made on the basis of the consumer’s evoked set”. Therefore past personal experience, promotional messages and consumption situations have strong implications on the quality to expect.

2.8 Brand associations

Kotler and Keller (2006) relate brand associations to customer’s thoughts, feelings, perceptions, images, experiences, beliefs and value and other emotional variables that can be directly linked to a specific brand.

3. CONCEPTUAL FRAMEWORK AND HYPOTHESES

The researchers set out the following hypotheses in order to establish the relationship between supply chain integrity and the four pillars of brand equity. The hypotheses are built on the assumption that if the supply chain members are able to perform their
functions in an unimpaired manner devoid of deliberate or inadvertent manipulation they can be in a position to positively influence brand equity.

H1: There is a positive relationship between brand awareness and brand equity.

H2: There is a positive relationship between brand loyalty and brand equity.

H3: There is a positive relationship between brand perceived quality and brand equity.

H4: There is a positive relationship between brand association and brand equity.

4. METHODOLOGY

The objective of this study is to examine the correlation between supply chain integrity (which is measured by the abilities of intermediaries to handle the seeds) and brand equity. The ultimate brand equity of the Seed Co Company is heavily dependent on the capabilities of the supply chain members to effectively and efficiently manage and deliver expected products (seeds) to the customers. The customers are the ultimate arbiters of the product. The respondents of this research were drawn from Masvingo urban where 50 respondents were interviewed from each of the selected Seed Co’s chain members (Seed Co.’s own retail branches, wholesalers and big retailers). The research adopted a descriptive research design which is defined as a scientific method which involves observing and describing the behaviour of subjects without influencing them in a way. This design was appropriate for it allowed the researchers to establish the relationship between supply chain integrity and brand equity.

This research adopted a two-tier approach to sampling in which research subjects were chosen on the basis of researchers’ convenience and personal judgement. Since the chain members were dispersed around town it was more feasible to use customers found in easily accessible distribution outlets and at the discretion of the researcher. The sample size of 150 Seed Co customers was used. A total of 50 respondents were drawn for each category of the supply chain members.

The researchers employed a survey method in which in-store interviews were administered to customers. A filter question was used to screen out those customers who had less than three years of using the Seed Co brand. For the purpose of this study a close-ended questionnaire was employed to collect data. It was based on the four constituent elements of brand equity (awareness, loyalty, perceived quality, and associations). A five point Likert scale was used by respondents to rate the degree to which they agreed or disagreed with the assertions made about the manner in which Seed Co.’s chain members enhanced the organisation’s brand equity. The questionnaire was pilot-tested on 15 selected customers in the city of Masvingo and this constituted 10% of the sample population. Pretesting enabled the researcher to refine the wording of the questions.

5. DATA ANALYSIS

The researchers adopted a multiple regression model which sought to establish a linear relationship that exists between supply chain integrity and brand equity variables. The table below shows the average values of responses from customers on the four brand equity variables.

<table>
<thead>
<tr>
<th></th>
<th>Own stores</th>
<th>Retailers</th>
<th>Wholesalers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>X1</td>
<td>45</td>
<td>22</td>
<td>28</td>
</tr>
<tr>
<td>X2</td>
<td>46</td>
<td>15</td>
<td>29</td>
</tr>
<tr>
<td>X3</td>
<td>44</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>X4</td>
<td>30</td>
<td>10</td>
<td>15</td>
</tr>
</tbody>
</table>

Figure 2: Average responses from customers.
Where: $Y =$ Equity; $X_1 =$ Awareness; $X_2 =$ Quality; $X_3 =$ Loyalty and $X_4 =$ Associations. We suggested the following model:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \epsilon_i$$

Where $i = 1; 2; 3$

**Degree of freedom:** $n = \sum_{i=1}^{3} n_i = 12$

We used the multiple regression analysis for linear models and we obtained the following equation:

$$Y_1 = -335 - 25X_{11} + 294.2X_{21} - 133.15X_{31} - 257.5X_{41}$$

Where:

$$\begin{pmatrix}
\beta_0 \\
\beta_1 \\
\beta_2 \\
\beta_3 \\
\beta_4
\end{pmatrix} = \begin{pmatrix}
-335 \\
-25 \\
294.2 \\
-133.15 \\
-257.5
\end{pmatrix}$$

6. RESULTS

6.1 Testing $H_1$

In our $H_1$ our tentative assumption was that there is a positive relationship between awareness and overall brand equity. The results of the t-test ($-25/10.6 = -2.36 \leq -1.8946$) demonstrate that there is no positive relationship between awareness and brand equity and therefore we reject $H_1$: $\beta_1 > 0$. This entails that supply chain members are not integral enough to positively influence brand equity by enhancing brand awareness as evidenced by the findings which portrayed a negative relationship. It was even evident during the data collection process that the supply chain members (retailers and wholesalers) were not proactive enough to inform and persuade customers to purchase Seed Co brand serve for Own Stores. This is presumably because they are stockists of products for various competing seed producing companies.

6.2 Testing $H_2$

Hypothesis $H_2$ was tested to assess the linear relationship between quality and overall brand equity. The t-test results ($294.2/12.24 = 24.04 \geq -1.8946$) indicate that there is a positive relationship between quality and brand equity and we therefore accept $H_1$: $\beta_2 > 0$. This demonstrates that Seed Co is a tried and tested brand which gives higher yields as compared to other competing brands. Since quality is a dependable guide for brand selection, supply chain members have been integral enough to emphasise on the issue quality to customers, since it has a bearing on stock turnover. The positive relationship could have been attributed to the price/quality relationship as customers tend to associate high price with high quality rather than as a result of the efforts of supply chain members.

6.3 Testing $H_3$

In testing $H_3$ we wanted to establish whether there is a linear relationship between loyalty and the overall brand equity variable. The results of the t-test ($-133.15/7.5 = -17.75 \leq -1.8946$) indicate there is no linear relationship between loyalty and brand equity and hence we reject $H_1$: $\beta_3 > 0$. The findings therefore indicate lack of integrity on the part of the supply chain members as stocking more than one brand of seeds clearly shows that as agents they do not discourage brand switching. Although results from the tests depict on overall picture of the degree of integrity of supply chain, results from Own stores customers indicated that they (Own Stores) expend a lot of effort in an attempt to encourage long-term relationships.
6.4 Testing H₄

Hypothesis H₄ was also examined in a bid to ascertain the existence of a linear relationship between brand associations and the overall brand equity. The t-test results (-257.5/16.2 = -15.9 ≤ -1.8946) are indicative of the fact that associations have a negative linear relationship with brand equity and thus we accept H₀: β₄ < 0 and therefore reject H₁: β₄ > 0. The results reflect that the supply chain members have not put in place mechanisms to associate the brand with the company and as a dependable brand which can enhance the status of the farmers. The results show that supply chain members have not been integral enough to enhance brand image of Seed Co brand.

7. CONCLUSIONS

The main objective of this research was to establish the relationship between the integrity of the supply chain members and customer based brand equity. We used customers to assess how supply chain members impact on the overall brand equity for the Seed Co brand based on the four pillars of brand equity namely: awareness, perceived quality, loyalty and other associations. The overall research findings point to the fact that the supply chain members are not playing their significant role of enhancing customer based brand equity as evidenced by negative relationships between awareness and brand equity, loyalty and brand equity and other associations and brand loyalty. However the supply chain members have strongly contributed towards a positive relationship between brand perceived quality and customer based brand equity.

8. RECOMMENDATIONS

In light of the limited roles supply chain members play to enhance customer based brand equity it is important that Seed Co should revamp its supply chain so that negative reverse effects may not affect the brand. It is imperative that Seed Co should train its supply chain members on how best to handle the Seed Co brand before customers. This will reduce the chances of counterfeits and non-performing products to infiltrate into their supply chain. With adequate parent company support the supply chain members are bound to handle the products more effectively and efficiently than they would for other competing brands in a manner that will enhance a competitive advantage for Seed Co brand over rivals.

9. FURTHER RESEARCH

This study was confined to Masvingo Urban and as such would not be reflective of the national results and it is against this background that we recommend further research be carried out in this area at macro level.

REFERENCES


