Innovative Marketing Strategies and Sales of Foundry Products in Nigeria

Patrick Onumah Agbo & Akintunde Olawande Ayeni
Department of Business Administration, University of Jos, Jos,
Department of Banking and Finance, University of Jos, Jos,

Abstract

This study evaluates innovative marketing strategies and the sales of foundry products in Nigeria using primary data collected from 43 foundries spread across the country. The research examines the application of marketing mix strategies in the sales of local foundry as well as the role of government in the sales of foundry products. The study tests five hypotheses using panel logistic regression, and the findings show significant relationship between product quality and sales of foundry product, price and sales of foundry products, promotion and sales of foundry product, government policy and sales of foundry products. However, there is no significant relationship between place and sales of foundry products. In this light, the study suggested among others, the application of local contents to the entire country and tying the public procurement act to local content policy. In addition, foundry manufacturers should embark on conscious and meticulous planning of their marketing strategies, with particular emphasis on promotional activity. This would create the necessary awareness, as well as help in mapping out successful strategies to counter government unfavorable policies.

Keywords: Innovative, Marketing strategies, Foundry products

Corresponding Author: Patrick Onumah Agbo
Background to the Study
A foundry is a factory that produces metal castings. Metals are cast into shapes by melting into liquids, pouring the metal in mould, and removing the mould material or castings after the metal has solidified as it cools. The most common metals processed are aluminum and cast iron. In the words of Inuwa (1995), Foundry is the oldest engineering industry in Nigeria starting over 20 centuries ago, and that, Foundry was known to have been practiced in the middle belt region of Nigeria over 200 years ago by iron smelting termed the Nok-culture. Bronze casting was practiced on the Southern plains of Benin, Ife and Igbo-ukwu over 100 years ago. These ancient foundry practices provided the means by which our forefathers produced their domestic and agricultural tools/implements and preserved their artistic values.

According to Jimoh, Irabor, Abhulimen, and Amiebenormon (2013), the development of foundry technology should be of strategic importance to nations on the path of industrialization. Major components of machine tools, power plants, industrial machinery and equipment, automobile, agricultural and textile industry and several others are products of the foundry industry. It is therefore, evident that the existence of foundries and associated machine tool shops are very important for the deepening and widening of the industrial base of any economy. This implies that without foundries, there would be no engineering subsystem, and consequently no realistic industrial base, no end to excessive importation dependence and hence no national industrial and economic self-reliance (Majekodunmi, 1997).

Jimoh et al (2013) listed the National Policy Objectives on foundry development to include: the promotion of growth and spread of foundries and allied metal forming industries in the country; the promotion of metal forging and spare parts manufacturing industries; the development and growth of machine tools industries; and the development of indigenous engineering capabilities for the design and manufacture of plants and machinery.

Foundry activity is a highly energy and labour intensive operation (Su & Chou, 2008). The authors further identified waste generation and lack of quality as a serious issue militating against efficient performance of foundry operation. To effectively solve this twin challenges confronting foundry operation, they advocated for effective strategy in the marketing foundry products. Porter (1996:61), defined strategy as “the creation of unique and valuable position, involving different set of activities”. According to him, if there were only one ideal position, there will be no need for strategy”. The essence of strategy is in the activities, choosing to perform activities differently, or to perform different activities better than rivals. Otherwise, a strategy is nothing more than a marketing slogan that will not withstand competition.

Successful marketing depends upon addressing a number of key issues. These include: What a company is going to produce; how it is going to develop its pricing; how it is going to deliver its products or services to the customer and how it is going to tell its customers about the products and services. Pour, Nazari and Emami (2013) posits that marketing mix is a particular combination of the product, its price, the methods to promote it and the ways to make the product available to the customer. Based upon its understanding of customers, a company develops its marketing mix of product, price, place and promotion. They posited further that, the elements of the marketing mix are intricately and sensitively related to each other and all the elements have to reinforce each other to enhance the experience of the customer. Contributing, Kalu (1998) stated that once the market facts are known, marketing management can mix the four elements in proportion to obtain the right blend that will produce the most profitable marketing results. The proportions of the mix will change as market conditions change or as the company's position in the market changes.
Nevertheless, several criticisms trail the adoption of the marketing mix as a successful strategy for businesses. Eavani and Nasiri (2012) are of the opinion that the mix does not consider customer behaviour but is internally oriented. The Mix regards customers as passive and does not allow interaction and cannot capture relationships. They further argued that the Mix is void of theoretical content as it works primarily as a simplistic device focusing the attention of management. Fakeideas (2008) believes that the conceptualisation of the mix has implied marketers are the central element. This is not the case because marketing is meant to be customer-focused management. Apparently, the influence of the marketing strategy on sales in organizations is not established in literature. On this canvas, this study intends to evaluate the influence of the marketing mix on the sales of foundry products in Nigeria.

**Problem Statement**
The Foundry industry in Nigeria is confronted with the challenge of lack of patronage from consumers of foundry castings and thus the urgent need for local content policy. The situation is synonymous with what is obtainable in other industries in the country, because many industries in Nigeria today are living in the 1960s and in the era of non-performance which has invariably crippled their marketing operations and therefore customer satisfaction. Hence, the objective today is to adopt marketing strategies that will make Nigerian industries productive, dependable, efficient and forward looking towards the process of continuous customer satisfaction and sales.

In the view of Amabile (2012) innovation is 'the successful implementation of creative ideas within an organization'. This implies that the business of innovation needs to be managed all the way from the creative inspiration through to a launchable product or service. Technology also, has always played a significant role for the foundry sub sector all over the globe, and because of the changing technologies, the foundries need to adapt to change and creativity to meet the very high-quality demand of end-users of foundry products. The CEO of Nigeria Foundries Limited, Vassily Berberopoulous argued that Nigeria hardly has any OEMs (Original Equipment Manufacturers) like Caterpillar, and so foundry production in the country is based on backward re-engineering of castings. This implies that the foundries must be technology complaint, innovative, creative, and might need effective marketing mix (product, place, price and promotion) to remain competitive. If they have problem with patronage then it implies that they are not competing efficiently locally, internationally and globally. Just like other sectors of the country's economy, the government plays a crucial role in the area of infrastructure provisions, setting enabling environment for business to thrive and as it affects the foundries, favourable policies that will ultimately influence patronage and sales.

**Research Questions**
Based the forgoing, the research intends to provide answers to the following questions.

- a) What is the effect of price on sales of foundry products in Nigeria?
- b) How does product quality affect sales of foundry products in Nigeria?
- c) What is the effect of place on the sales of foundry products in Nigeria?
- d) How does promotional activities influence the of foundry products in Nigeria?
- e) What is the role of government in the sales of foundry products in Nigeria?
Research Hypotheses
The following hypotheses were developed to provide direction for the study.

**H₁** Price does not have a significant effect on the sales of foundry products in Nigeria.

**H₂** Product quality does not have a significant impact on sales of foundry products in Nigeria.

**H₃** Place does not have a significant impact on sales of foundry products in Nigeria.

**H₄** Promotional activities do not have a significant effect on sales of foundry products in Nigeria.

**H₅** Government policies does not significantly affect sales of foundry products in Nigeria.

Literature Review

**Sales of Foundry Product in Nigeria**

It is an open secret that the few public foundries which are in existence such as Ajaokuta Steel Company, Aladja Steel Company, Nigeria Machine Tools and Nigeria Railway Corporation (NRC) foundries are operating below optimal level because of lack of adequate working capital, trained manpower, stable power supply and infrastructural facilities (Aladewolu, 1998). The author further argued that, it is not too different for the privately-owned foundries, which, though are better managed and productive, but yet are few and majority are only jobbing foundries. This is understandable as many private investors cannot afford the investment required to set up large scale foundries.

Despite the above-mentioned problems, one fact stands out clearly, that, there can be no meaningful industrialization without developing and patronizing the foundry sector in Nigeria. This fact was succinctly presented by Ezekwe (1995), when he described the foundry industry as “the mother of all industries”. Similarly, many experts believe that the Nigerian foundries have come a long way and they readily point to some of the giant strides made by the subsector currently in the servicing of the cement industry, construction industry, automobile industry, mining and quarry industry to mention just but few.

A survey commissioned by the National Agency for Science and Engineering Infrastructure, NASENI in 1995, shows that Nigeria has about 160 foundries, of this only 60 are registered commercial and they produce at an average capacity of 55%, accounting for less than 30% of the nation's required castings. Inuwa (1995) asserted that over 70% of our casting needs is still imported, 40 years after our independence. This to say the least is preposterous. It shows the low level of commitment of this nation to start a determined journey to the destination of the developed nations.

**Marketing Mix**

This is a set of controllable elements of marketing tools and marketing strategies of a company in combining these elements. Cutler(2000) posited that a set of marketing mix variables can be controlled by the marketing companies and institutions in their target market and its composition are required for the reaction. Elements of the marketing mix are a set of marketing tools for achieving the goals of the institute of marketing (HaKansson and Waluszewski, 2005).

Marketers, in order to receive favourable responses from their target markets, use many tools. These tools comprise the marketing mix. In fact, it is a set of tools that institutions use to achieve their marketing goals. These tools can be classified into four major groups, called the...
4P’s of marketing: product, price, place and promotion (Harrell and Frazier, 1999). Product is some good or service that a company offers in the market. (Kotler, Armstrong, Wong, & Saunders, 2008). Product is something that can be offered to the customers for attention, acquisition, or consumption and satisfies some wants or needs. Price is what a customer has to pay to acquire a product, or cost of a product to a customer. Price is considered to be the most significant factor that affects consumer’s choice. (Kotler, et. al. 1999). Kotler, et. al. (2008) defines promotion as the activities a company performs in order to communicate to its existing and potential customers. Multiple channels are used to communicate to different parties (distributors, customers) and different means could be used to do promotion. Lastly, Place refers to the availability of the product to the targeted customers. A company can adopt multiple channels to get its product to the customers. (Kotler, et. al., 2008) These channels can be direct and indirect. Decisions about future marketing by marketers should also affect the final consumer and commercial channels. Thus, despite the decision of institutions concerning a number of variables of the marketing mix and because it requires a long time, little can change in the short term in their marketing mix. Each firm strives to build up such a composition of 4P’s, which can create highest level of consumer satisfaction and at the same time meet its organizational objectives. Thus, this mix is assembled keeping in mind the needs of target customers, and it varies from one organization to another depending upon its available resources and marketing objectives.

Marketing Mix and Sales
Marketing efforts do not impact performance sales independently of each other. Marketing mix activities need to be coordinated because they interact to determine performance (Gatington, 1993). This will help managers to take advantage of the complementarity and to avoid incompatibility between marketing mix instruments given constraints by budget and the variables themselves. Evidence from literature shows that, for example advertising effectiveness is enhanced by the quality of the product (Gatington, 1993). Sales call effectiveness increases with the use of samples and handouts in medical marketing and with advertising, consumer price-sensitivity has been shown to be affected by advertising. The 4P’s marketing mix have been criticized for ignoring the human factor, lack of strategic dimension, offensive postures and lack of interactivity. The model is said to reflect the sellers view rather than the buyer.

Government and Foundry Development in Nigeria
The national policies on Foundry development are very laudable. Jimoh et. al (2013), They include:
(a) The promotion of growth and spread of foundries and allied metal forming industries in the country.
(b) The promotion of metal forging and spare parts manufacturing industries.
(c) The development and promotion of machine tools industries.
(d) The development of indigenous engineering capabilities for the design and manufacture of plants and machinery.

Realizing, the important role of the engineering subsector, the Federal Government established the National Agency for Science and Engineering Infrastructure (NASENI) in 1992, to remedy the nation’s previous mistakes and map out strategies to develop the level of Nigeria’s capability in the production of delivery systems and components. NASENI organized the existing Foundries companies to form the Foundry Association of Nigeria (FAN), a forum for favourable government foundry policy.
NASENI has assisted FAN enormously to channel the views and aspirations of the foundry men to government. Through their joint efforts and that of the Nigeria Society of Engineers, NSE, it was possible to win the mandate of government to ban the exportation of metal scraps, one of the major raw materials for foundries. In the words of the pioneer chairman of the NASENI, Late Prof. Ezekwe, government main objective is to “promote a program for the growth and expansion of a robust foundry practice in Nigeria”.

The most unfortunate problem about schemes introduced by government to promote expansion of industries is that their conditions of lending are very difficult to be satisfied by most foundries as the foundry industry is treated by these schemes as a service sub-sector having high risks of lack of expected customer patronage. Regrettably, NSE’s move in the 1990s to set up an Engineering and Technological Bank, specifically planned to address this issue was killed mid-way (Inuwa 1995).

**Theoretical Review**

In line with the subject matter of this study, the rational choice theory in relation to marketing mix provides a cogent theoretical underpinning. Rational choice theory is an approach used by social scientists to understand human behaviour. The approach has long been the dominant paradigm in economics, but in recent decades it has become more widely used in other disciplines such as Sociology, Political Science, and Anthropology. This spread of the rational choice approach beyond conventional economic issues is discussed by Becker (1976), Radnitzky and Bernholz (1987), Hogarth and Reder (1987), Swedberg (1990), and Green and Shapiro (1996).

Rational choice theory assumes that all people try to actively maximize their advantage in any situation and therefore consistently try to minimize their losses. The theory is based on the idea that all humans base their decisions on rational calculations, act with rationality when choosing, and aim to increase either pleasure or profit. Rational choice theory also stipulates that all complex social phenomena are driven by individual human actions. While rational choice theory is clean and easy to understand, it is often contradicted in the real world. Dissenters are of the opinion that individuals do not always make rational utility-maximizing decisions. For example, the field of behavioural economics is based on the idea that individuals often make irrational decisions and explores why they do so (Green, 2002). The choice of this theory is premised on the fact that Foundry companies try to maximise their advantage and might want to employ an effective marketing mix to achieve this.

**Empirical Review**

A plethora of studies have been carried out to investigate the relationship between the marketing mix and sales performance in firms. Kiprotich (2012) did a study on the effects of 4ps marketing mix on sales performance of automotive fuels of selected service stations in Nakuru town with the use of questionnaires. Findings revealed that the oil marketers’ performance is significantly influenced by the 4 ps. Each of the elements however carries a unique contribution to sales performance of automotive fuels in the selected stations in Nakuru town.

Pour, Nazari and Emami (2013) studied the effect of marketing mix in attracting customers in Kermanshah Province in Iran with the use of questionnaire and Pearson correlation test as method of data collection and data analysis respectively. It was established that factors in the marketing mix have a significant positive effect in absorbing customers.
Adewale, Adesola, Oyewale (2013) studied the impact of marketing strategy on business performance of Selected Small and Medium Enterprises (Smes) in Oluyole Local Government, Ibadan, Nigeria with the use of a questionnaire. Correlation coefficient and multiple regression analysis were used to analyse the data with the aid of statistical package for social sciences (SPSS) version 20. Findings revealed that product, promotion, place, price are joint predictors of business performance in term of profitability, market share, return on investment, and expansion. However, they do not influence sales performance independently.

Gaski and Etzed (1996) studied National aggregate consumer sentiment toward marketing using questionnaires as data collection instruments. Their study revealed that the marketing mix element especially promotion and place, does not influence sales performance in organizations. Apparently, there seems to be divided opinion on the impact of the marketing mix on sales performance on organizations which has given credence to this study. Furthermore, the relationship between sales performance and the marketing mix has not been carried out in the Nigerian Foundry subsector despite its importance to the country’s sustainable growth. On this canvas, any attempt to fill this gap will be invaluable to academic literature.

**Methodology**

This study adopted the longitudinal causal research design (i.e. cause-and-effect) research design. This cause-effect explains the effect of the relationship between identified dependent variable which is sales and independent variables; Price, product quality, Place, promotional activities, and government policy for this study. Panel data was used for this study. The data was collected for three different periods in 2016 (i.e. first three quarters for the 43 foundry firms). A close-ended questionnaire was administered each of these foundries. The questionnaire is divided into different sections which was used as constructs for the measure of the six variables for this study.

This study adopted a Panel logistic regression analysis. The justification for the logistic analysis is the value of the dependent variable which was measured as binary values. Panel data is a repeated observation on the same cross section, typically of individual variables that are observed for several time periods. For this study, the data was collected for three different periods in 2016 i.e. first three quarters for the 43 foundry firms. In panel regression, three are commonly used approaches; Pooled Regression Model, Fixed Effect Model, and the Random Effects Model.

**Model Specification**

In order to achieve the objectives and test the formulated hypotheses in this study, the following model was formulated thus:

$$Y_i = f(X_{1i}, X_{2i}, X_{3i}, X_{4i}, X_{5i})$$

The model was specified into a functional model as:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i}$$

Where:

$Y_i$ = sales of firm $i$ in time $t$

$X_{1i}$ = Price firm $i$ in time $t$

$X_{2i}$ = Product quality firm $i$ in time $t$
Results and Discussion

Table 1: Results of Pooled, Fixed and Random Regression Estimates

<table>
<thead>
<tr>
<th>Variables</th>
<th>Panel A Pooled coefficient</th>
<th>Panel B Fixed coefficient</th>
<th>Panel C Random coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>2.569</td>
<td>0.3305</td>
<td>2.511</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
</tr>
<tr>
<td>Product</td>
<td>0.590</td>
<td>0.2222</td>
<td>0.622</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
<td>0.001**</td>
<td></td>
</tr>
<tr>
<td>Promo</td>
<td>2.129</td>
<td>0.9603</td>
<td>2.329</td>
</tr>
<tr>
<td></td>
<td>0.004**</td>
<td>0.001**</td>
<td></td>
</tr>
<tr>
<td>Place</td>
<td>-0.076</td>
<td>0.2333</td>
<td>0.095</td>
</tr>
<tr>
<td></td>
<td>0.662</td>
<td>0.556</td>
<td></td>
</tr>
<tr>
<td>Govt</td>
<td>0.797</td>
<td>1.2734</td>
<td>0.920</td>
</tr>
<tr>
<td></td>
<td>0.002**</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.712</td>
<td>2.6263</td>
<td>1.196</td>
</tr>
<tr>
<td></td>
<td>0.723</td>
<td>0.797</td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.390</td>
<td>0.0647</td>
<td>0.235</td>
</tr>
<tr>
<td>N</td>
<td>129</td>
<td>129</td>
<td>129</td>
</tr>
<tr>
<td>LR statistic</td>
<td>6.08</td>
<td>9.83</td>
<td>4.71</td>
</tr>
<tr>
<td></td>
<td>0.0001**</td>
<td>0.000**</td>
<td>0.000**</td>
</tr>
<tr>
<td>Lagragian Multiplier test</td>
<td>5.80</td>
<td>p-value</td>
<td>0.1216</td>
</tr>
<tr>
<td>Hausman Test</td>
<td>-</td>
<td>-</td>
<td>1.56</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.3600</td>
<td></td>
</tr>
</tbody>
</table>

Note: ****** show significance at 1%, 5% and 10% respectively

Table 1 shows the result of the logistic panel regression. From the result, the Lagragian multiplier test was conducted to determine the best estimator between the pooled and the fixed effect. The result indicated that due to the presence of panel effect, the fixed effect is the better estimator. Consequently, a Hausman specification test shows that the random effect result which is the panel C is a better estimator than the fixed effect results in panel B, given that the result of the chi-square is 1.56 with a p-value of 0.3600 greater than the significant level of 5%.

The coefficient of price which is ($\beta = 2.511$, $P$-value = 0.000) indicates that a positive and significant relationship at 5% exists between price and sales of foundry product. The value of the coefficient of price met the *a priori* expectation. This means that price is likely to influence the *sales* of foundry. Since p-values for price is less than the level of significance of 0.05 (0.0000). This implies that Price does have a significant effect on the sales of foundry products in Nigeria. This is consistent with the view of Kiprotich (2012) who argued that price have an effect on sales in organizations.
Secondly, the coefficient value of Product quality which of ($\beta = 0.622$, $P$-value $= 0.001$). The value indicated there is a positive and significant relationship existing between Product quality and sales of foundry product. A unit increase in product quality will mostly likely bring about an increase in the level of sales of foundry product by 62.2%. Hence, product quality is more likely to enhance sales of foundry product, given that the $p$-values for product quality is less than the level of significance of 0.05 (0.0000). This result was also confirmed in the study of Kiptrotich (2012)

Thirdly, the effect of promotional activities with coefficient ($\beta = 2.329$, $P$-value $= 0.001$) on sales of foundry product value is positive and significant. This indicated that a 1% increase in promotional activities is more likely bring about an increase in sales of foundry by 2.329 units. The $p$-value which is 0.001, is less than 0.05 level of significance. This therefore means that promotional activities do have a significant impact on sales of foundry products in Nigeria. This finding is not consistent with the finding of Gaski and Etzed (1996) who argued that promotional activities do not necessarily influence sales in organizations. This implies that marketing is quite essential in the foundry subsector.

Fourthly, coefficient value of Place which is ($\beta = 0.095$, $P$-value $= 0.556$) indicated that there is a positive effect of place on sales of foundry product. Keeping all the other variables constant, a 1% increase in the level of place will increase the level of sales of foundry product by 9.5%. The implication is that Place is likely to increase sales of foundry product, but not at a significant level since the $p$-value is (0.556) higher than the significant level of 0.05. Hence, Place does not have a significant impact on sales of foundry products in Nigeria. This is consistent with Gaski and Etzed (1996) who found place and promotional activities not to have any influence on sales.

Finally, the coefficient of government policies which is ($\beta = 0.920$, $P$-value $= 0.000$). The value indicates that a positive and significant relationship at 5% exists between government policies and sales of foundry product. This means that favourable government policies are likely to influence the sales of foundry. Since $p$-values for price is less than the level of significance of 0.05 (0.0000). The conclusion is that reject the null hypothesis and accept the alternate hypothesis, concluding that Government policies do significantly affect sales of foundry products in Nigeria. This implies that the role of government in the marketing of foundry products cannot be over-emphasized.

**Conclusion and Recommendation**

The purpose of this research is to critically examine the marketing strategies of foundry manufacturers under the prevailing economic and business environment. Thereafter, to identify where changes are necessary, make useful suggestions, in order to put the strategic foundry subsector at the forefront and to create the needed awareness about the industry. Findings of the study revealed that elements in the marketing mix have an influence on sales of foundry product, except place which have an insignificant impact. Government policies also have a significant influence on the sale of foundry products.

Based on the foregoing, the study recommends that foundry manufacturers should embark on a conscious and meticulous planning of their promotional strategy taking the 4ps into cognizance, especially as it relates to promotional activities, pricing strategies and product quality, if the current awareness problem is to be solved. The need for a well-planned and a
budgeted promotional strategy cannot be overemphasized. Not only would such a move create the needed awareness but by extension should lead to increased patronage of their products. Government should also strengthen its effort on this subsector by initiating policies that will give foundries an enabling environment to thrive and conform with international best practices in this sector. The application of local contents to the entire country and tying the public procurement act to local content policy is also an imperative for growth in this subsector.

References


