# FACTORS AFFECTING NEW VEHICLE SALE IN THE KENYA MOTOR INDUSTRY: A CASE OF GENERAL MOTORS (EAST AFRICA) LIMITED

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## ABSTRACT

*The automotive industry faces many challenges. It suffers from long-term over capacity, with the inevitable depressing effect on profitability. A spate of mergers and acquisitions in the industry, amongst both vehicle manufacturers and component makers, is one consequence of this. Further rationalization amongst incumbents in the developed world seems inevitable, especially as new entrants in the developing world continue to create new capacity. In such an environment, anything that risks damage to brand value or drives up operating costs is obviously highly undesirable. The objective of this study is to determine the factors affecting new vehicle sale in the Kenya Motor Industry, a case of General Motors (E.A) ltd. This study adopted a descriptive survey design. The population comprised of 177 employees of General Motors (East Africa) Ltd, Kenya. Stratified proportionate random sampling technique was used to select the sample. Primary as well as secondary data was collected. Secondary data was obtained from relevant literature review from studies, automotive journals, magazines and the internet. Primary data was collected using questionnaires. Secondary information would be collected from motor*

*vehicle reports, business magazines, automobile journals and other relevant materials on the motor industry.*

**Key words:** *Culture, Government policy, technology, and Vehicle*

## Introduction

The evolution of the automotive industry has been influenced by various innovations in fuel consumption efficiency, vehicle components, societal infrastructure, and manufacturing practices, as well as changes in markets, suppliers and business structures (Bradley, 2001). Automobile production is among the largest manufacturing industries in the world, and as such it is a critical economic driver, contributing substantially to employment and productivity. Motor vehicle production reportedly accounts for over 5 percent of the U.S. private-sector gross domestic product (GDP), and one out of every seven jobs in the United States is in automotive manufacturing or a related industry. Automakers are important customers of other businesses; for example, automakers are the largest consumer of steel in the United States (Felipe and Durbin, 2008).

According to Felipe and Durbin (2008), the United States is the world's largest single-country producer and consumer of motor vehicles. In 2001, passenger car and commercial vehicle production reached 11.4 million units, and sales reached 17.5 million units. Despite the fact that it is a mature market, the United States remains the most important country in the world for investment by, and competition among global motor vehicle producers. Owing to these influences, the U.S. motor vehicle industry has been characterized by constant organizational and technological change, an increasing global presence, extensive international alliances, greater cooperation among domestic rivals, and improved responsiveness to consumers. The industry

has made such changes in the presence of new regulatory demands, extreme cycles in the U.S market, and strong competition from foreign automakers.

## Statement of the Problem

According to the Kenya National Bureau of Statistics (KNBS) economic survey (2012), transport and communication sector recorded a growth of 4.5 per cent in 2011 compared to 5.9 per cent in 2010. Transport and storage sub-sector increased by 4.0 per cent compared to 6.9 percent in 2010. Communication sub-sector, recorded a growth of 4.3 per cent in 2011 compared to 4.5 per cent in 2010. In terms of value output, the survey ranks road transport first in the whole sector, and the sector is ranked third overall in contribution to the national GDP.According to the Japanese Used Car Exporter and Auction Agent (2010), 45,788 units of cars were imported to Kenya in 2006, 42,347 units in 2007, 40546 units in 2008 and 44,699 units in 2009. Moreover, the new vehicle market registered fewer sales in the same years (Mwenda, 2002). Data from Kenya Motor Industry (the industry lobby) show that the sale of new motor vehicles dropped by 39 per cent in 2009. The hemorrhage in the market place is due to the country's under-performing economy that is keeping potential customers mainly government and corporate Kenya away from showrooms.

Most individuals have opted for the second hand versions, lured by lower pricing despite the high maintenance costs they expose the Kenyan economy to, and foreign exchange loss as a result of importation of spare parts which are not locally available and have high failure rate compared to the new vehicles. 84 per cent of the Kenyan motor industry is controlled by second hand vehicles. This is despite the fact that the Kenya manufacturing capacity has been underutilized over the past five years. General Motors (EA) Ltd capacity was at 42 per cent

utilization. General Motors (East Africa) Ltd also recorded a -4.07 per cent dip in the market share in 2011 as compared to 2010 the same time.

Research and studies investigating factors affecting new motor vehicle sale have been done in America, Europe, India, China and even South Africa. Locally, Ndungu (2008) conducted a survey of the vertical integration strategies used in the automotive industry in Kenyawhile Kipchirchir (2008) surveyed the Kenyan Motor Vehicle Industry of the foreign exchange risk management practices it employs. However, there is no study in Kenya that has determined the factors affecting new vehicle sale in the Kenya. This study, thereforeseeks to fill this information gap by exploring factors affecting new motor vehicle sale in Kenya, taking a case of General Motors (E.A) Ltd.

## General Objectives

The general objective of the study was to determine the factors affecting new vehicle sale in the Kenya Motor Industry.

## Specific Objectives

The specific objectives of the study were:

i)  To determine the influence of price of second hand vehicles on the sale of new vehicles;

ii) To assess the effect of vehicle design on the sale of new vehicles in Kenya;

iii) To determine the effect of customer tastes on the sale of new vehicles in   Kenya;

iv)To assess the influence of government policy on the sale of new vehicles; and

v) To assess the role of a firm's country of origin in model preference.

### Literature Review

This study reviewed studies that have been done, both locally and internationally on the factors that affect sale of new vehicles; economic factors, customer tastes and preferences and government policies. The chapter also looks at the internal and external factors affecting new vehicle sale. Theories which have been advanced on the same or related areas of study, together with conceptual framework were also considered.

### Theoretical Framework

### Asymmetric Information Theory

The concept of asymmetric information was first introduced in George A. Akerlof's (1970) paper *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*. In the paper, Akerlof develops asymmetric information with the example case of automobile market. His basic argument is that in many markets the buyer uses some market statistic to measure the value of a class of goods. Thus the buyer sees the average of the whole market while the seller has more intimate knowledge of a specific item. Akerlof argues that this *information asymmetry* gives the seller an incentive to sell goods of less than the average market quality. The average quality of goods in the market will then reduce as will the market size. Such differences in social and private returns can be mitigated by a number of different market institutions.

Akerlof (1970) begins by assuming a model of the automobiles market where there are four kinds of cars; new cars and old cars, which both can be good or bad (the bad cars he refers to as "lemons"). When buying a car there is a probability $q$ that it is a good car and a probability $1-q$ that it will be a lemon. This is true for both new and old cars.

### Buyer / Consumer Motivation Theory

Motivation is the force that initiates, guides and maintains goal-oriented behaviors. It is what causes us to take action, whether to grab a snack to reduce hunger or enroll in college to earn a degree. The forces that lie beneath motivation can be biological, social, emotional or cognitive in nature (Weber, Max 1947).Researchers have developed a number of different theories to explain motivation. Each individual theory tends to be rather limited in scope. However, by looking at the key ideas behind each theory, you can gain a better understanding of motivation as a whole (Kerlinger, Fred (1986).

### Instinct Theory of Motivation

According to instinct theories, people are motivated to behave in certain ways because they are evolutionarily programmed to do so. An example of this in the animal world is seasonal migration. These animals do not learn to do this; it is instead an inborn pattern of behavior.

William James(1902) created a list of human instincts that included such things as attachment, play, shame, anger, fear, shyness, modesty and love. The main problem with this theory is that it did not really explain behavior, it just described it. By the 1920s, instinct theories were pushed aside in favor of other motivational theories, but contemporary evolutionary psychologists still study the influence of genetics and heredity on human behavior.

Consumer behaviour is affected by many uncontrollable factors. Just think, what influences you before you buy a product or service? Your friends, your upbringing, your culture, the media, a role model or influences from certain groups?
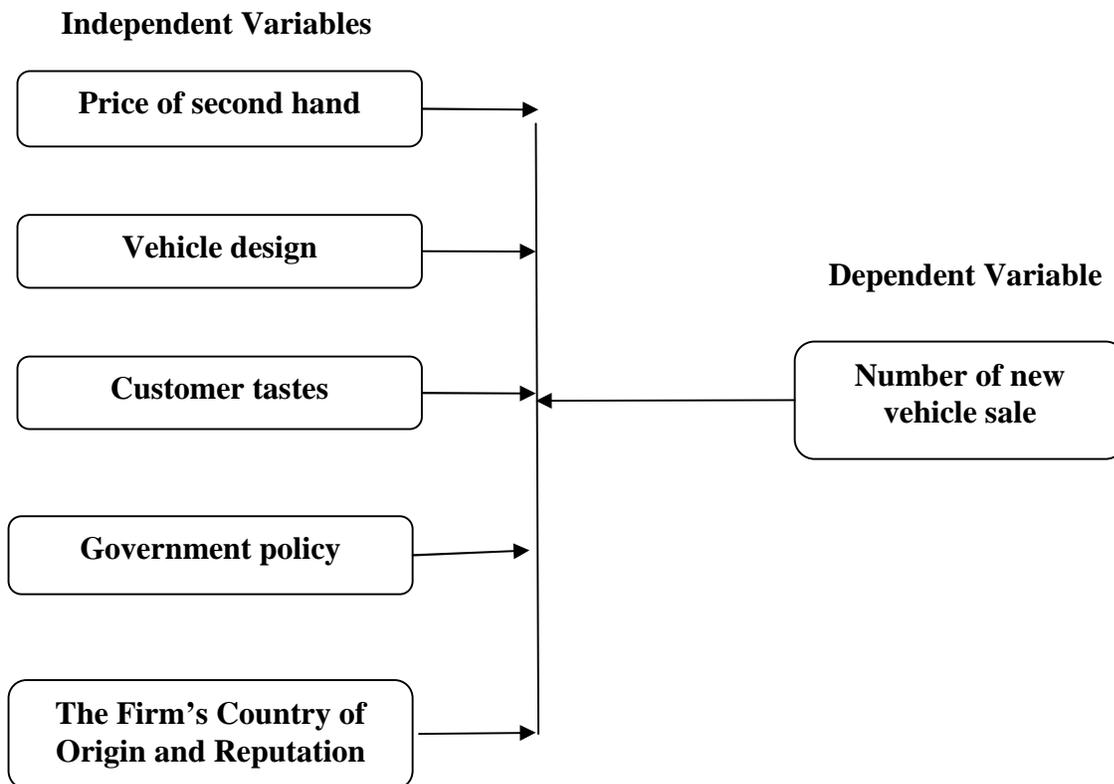
### Conceptual Framework

**Independent Variables**

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┌──────────────────────┐
│ Price of second hand │ ───────┐
└──────────────────────┘        │
                                │
┌──────────────────────┐        │          **Dependent Variable**
│    Vehicle design    │ ──────►│
└──────────────────────┘        │       ┌──────────────────────┐
                                │       │     Number of new     │
┌──────────────────────┐        │◄──────│     vehicle sale      │
│    Customer tastes   │ ──────►│       └──────────────────────┘
└──────────────────────┘        │
                                │
┌──────────────────────┐        │
│  Government policy    │ ──────►│
└──────────────────────┘        │
                                │
┌──────────────────────┐        │
│ The Firm's Country of│ ──────►│
│ Origin and Reputation│        │
└──────────────────────┘        │
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**Figure 1: Conceptual Framework**

### Critique of the Existing Literature

Yeoh&Jeong (1995) stated that, in general a country's economy is measured by economic growth (GDP-Growth) and unemployment statistics. The greater the GDP the more value is produced in an economy. Low unemployment rate translates to better spending power of the population. The political environment of the country influences the business to a great extent. New vehicle dealers contend that the tax regime has tended to favour the importers of second hand vehicles. These views are passed by time and changes in technological advancements and

globalization as well as the economic integrations between countries such as the East African Cooperation are likely to change the government policy and hence its effect on new vehicle sale in Kenya. This study thus aimed at looking into the effects of government policy on new vehicle sale in Kenya to validate these views.

According to Mallen (1996), the economic and cultural changes are taking place to allow the company to move in the right direction with respect to attitudes in the society.Currimbhoy (2004) notes that it may be important to some consumers, what other people think about their vehicle. A good brand image in certain segments could therefore be helpful in capturing those sales. Producers working on and improving their brands image could therefore realize positive market effects. The propositions however have not analysed the economic changes in developing countries and therefore have no taste of the economic factors affecting new vehicle sale in a local context.

According to Nieuwenhuis& Wells (2003), technological environment influences the business in terms of investment in technology, consistent application of technology and the effects of technology on markets. It is also the key driver for innovations in an industry. As other researchers have posited, innovation is the introduction of new ideas, goods, services and practices which are intended to be useful. In the car industry, technology and innovation play an important role as they improve standards of driving (Haire, 2001).  These views are however not sufficient to justify the influence of technology on new vehicle sale in a local context. There is therefore dire need to illustrate the nature of technology and its effect on new vehicle sale in Kenya.

Jobber (2004) noted that understanding consumer behaviour, their spending culture and budget is crucial in the car industry to be able to offer what the consumers' wants or needs. In addition,

Waller and Steel (2002) stated that the choice of brand, product, and dealership are only part of an overall set of purchase decision criteria including the acquisition and financing method, access to discounts and 9organizational levels at which negotiations take place. These views however are not comprehensively justifiable on how the customer tastes and preferences vary across the industry especially in local context. The current study strives to bridge this gap by bringing to light the effects of customer tastes and preferences on new vehicle sale in Kenya.

## Research Gaps

Most of the previous studies done on the motor vehicle industry had concentrated on vehicle industry in international markets mostly on the western countries where the technology, economic, government policies and customer tastes and preferences were different from the same factors in Kenya. Further, the studies were carried out when the operating environments were not as drastic as at the time of this study thus the need to carry out another study that would account for the changes in operating environment encountered in the country. This study, therefore seek to fill the existing research gap by carrying out a study to determine the factors affecting new vehicle sale in the Kenya motor industry with focus on General Motors (East Africa) Limited.

## Research Methodology

This study adopted a descriptive survey design which according to Churchill (1991) is appropriate where the study soughtto describe the characteristics of certain groups, estimate the proportion of people who have certain characteristics and make predictions. The study aimed at collecting information from respondents on factors affecting sale of new vehicle sale in Kenya.

Khan (1993) recommended descriptive survey design for its ability to produce statistical information about aspects of education that interest policy makers and researchers. Descriptive survey research designs can be used in preliminary and exploratory studies to allow researchers to gather information and summarize, present and interpret data for the purpose of clarification (Orodho, 2003). According to Mugenda and Mugenda (1999) the purpose of descriptive research is to determine and report the way things are and it helps in establishing the current status of the population under study. Borg and Gall (1996) note that descriptive survey research is intended to produce statistical information about aspects of a study that interest policy makers. Gay (1992) asserted that surveys are self-report study that requires the collection of quantifiable information from the sample. They are useful for describing, explaining or exploring the existing status of two or more variables (Mugenda and Mugenda, 1999).

The study was carried out in Nairobi. The population comprised of 177 employees of General Motors East Africa Limited, Kenya.

Stratification aimed to reduce standard error by providing some control over variance. The study grouped the population into four strata i.e. sales and marketing, service workshops, engineering and parts sales.

From each stratum the study used simple random sampling to select 53 respondents.

From the above population of 177, a sample of 30% from within each group in proportions that each group bear to the population as a whole will be taken using stratified random sampling which would give each item in the population an equal probability chance of being selected.

Primary as well as secondary data was collected. Secondary data was alsoobtained from relevant literature review from dissertations/thesis, car journals, magazines and the internet. Primary data was collected using questionnaires.

The researcher obtained an introductory letter from the University to collect data from General Motors East Africa Limited then personally deliver the questionnaires to the respondents and had them filled in his presence.

The process of data analysis involved several stages namely; data clean up and explanation. Data clean up involved editing, coding, and tabulation in order to detect any anomalies in the responses and assign specific numerical values to the responses for further analysis. Completed questionnaires were edited for completeness and consistency. The data will then be coded and checked for any errors and omissions (Kothari, 2004). Frequency tables, percentages and means will be used to present the findings. Responses in the questionnaires will be tabulated, coded and processed by use of a computer Statistical Package for Social Science (SPSS) Version  21 programme to analyze the data. The responses from the open-ended questions will be listed to obtain proportions appropriately; the response will then be reported by descriptive narrative. Descriptive statistics such as mean and standard deviation will be used. Tables, pie-charts, and graphs were used to present responses and facilitate comparison.

Content analysis is defined by Creswell (2003) as a technique for making inferences by systematically and objectively identifying specific characteristic of messages and using the same approach to relate trends. According to Mugenda and Mugenda (2003) the main purpose of content analysis is to study the existing information in order to determine factors that explained a specific phenomenon. According to Kothari (2004), content analysis uses a set of categorization for making valid and replicable inferences from data to their context. The results will then be interpreted in order to draw conclusions and recommendations.

The following model was used to determine the factors affecting new vehicle sale in the Kenya Motor Industry. A multivariate analysis between the number of new vehicle sale and five

determining variables were performed by estimating a linear regression as indicated by the regression equation below:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon)$$

$Y$ = Dependent variable used for the number of new vehicle sales

$\alpha$ = Constant (The intercept of the model)

$\beta$ = Coefficient of the X variables (independent variables)

$X_1$= price of second hand vehicles

$X_2$= Vehicle design

$X_3$= Customer tastes

$X_4$= Government policy

$X_5$= The Firm's Country of Origin and Reputation

$\varepsilon$= Error term

### Findings and discussions

The study found out that the price of second hand vehicles affect new vehicle sale in the Kenya Motor Industry; that the price of second hand vehicles affects new vehicle sale in the Kenya Motor Industry to a great extent; thateconomic downturn affects new vehicle sale in the Kenya Motor Industry to a great extent as shown by a mean of 4.0, that quality/durability affects new vehicle sale in the Kenya Motor Industry as shown by a mean of 4.0; that personal budget affects new vehicle sale in the Kenya Motor Industry as shown by a mean of 3.6; that family plans affect new vehicle sale in the Kenya Motor Industry as shown by a mean of 3.6; and that environmental issues affect new vehicle sale in the Kenya Motor Industry as shown by a mean of 3.5.

This was in line with studies by Jobber (2004), that price is one of the key factors in vehicle sale as it represents what a company earns as returns. Price setting is to be regarded with most concern as both undercharging and overcharging can have dramatic effects on the company's profitability. When setting a price a company has to be aware about the elasticity of its product.

It was also found out that the vehicle design affects new vehicle sale in the Kenya Motor Industry; that the vehicle design affects new vehicle sale in the Kenya Motor Industry to a great extent, that fuel consumption rate influences the purchase of a new vehicles as shown by a mean of 4.6; they also agreed that lens trim – leather or clothes influences the purchase of a new vehicle as shown by a mean of 4.4; that mileage service interval influences the purchase of a new vehicle as shown by a mean of 3.9; that new or used spare parts influences the purchase of a new vehicle as shown by a mean of 3.8; while others indicated that whether a car was manual or automatic influences the purchase of a new vehicle as shown by a mean of 3.7.

This is in collaboration with studies by Haire (2001) that there are three main categories innovation can have an impact on; the first category is the performance and the economy of the motorization. Examples of this would be the improvement of performance of diesel engines or the development of hybrid engines to reduce consumption by the Japanese and to recycle combustion gases hence raising the emission levels.

According to the findings, majority of the respondents strongly agreed that fuel consumption rate influences the purchase of a new vehicles as shown by a mean of 4.6; they also agreed that lens trim – leather or clothes influences the purchase of a new vehicle as shown by a mean of 4.4; that mileage service interval influences the purchase of a new vehicle as shown by a mean of 3.9; that new or used spare parts influences the purchase of a new vehicle as shown by a mean of 3.8;

while others indicated that whether a car was manual or automatic influences the purchase of a new vehicle as shown by a mean of 3.7.

Further observations were that the government policy affects new vehicle sale in the Kenya Motor Industry, that the vehicle design affects new vehicle sale in the Kenya Motor Industry to a great extent, that labor laws and the age limit of importation of used vehicles affect the purchase of new motor vehicle to a great extent as shown by a mean of 4.4; that pollution regulation affects the purchase of new motor vehicle to a great extent as shown by a mean of 3.5 while the governments' tax regime affects the purchase of new motor vehicle to a moderate extent as shown by a mean of 2.9

## Regression Analysis

In addition, the researcher conducted a linear multiple regression analysis so as to test the relationship among variables (independent) on to evaluate the anti- counterfeiting strategies used by pharmaceutical industry in Kenya. The researcher applied SPSS verion 21 to code, enter and compute the measurements of the multiple regressions for the study. Findings are presented in the following tables;

**Model Summary**

| Model | R | R square | Adjusted R square | Std. Error of the estimate |
|---|---|---|---|---|
| 1 | .877a | .865 | .607 | .2443 |

**Source: Research, 2013**

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (Number of new vehicle sale) that is explained by all the five independent

variables (Price of second hand vehicles, vehicle design, Customer's Tastes, Government Policy, and Firm's Country of Origin and Reputation).

The five independent variables that were studied, explain only 86.5% of the number of new vehicle sales as represented by the $R^2$. This therefore means that other factors not studied in this research contribute 13.5% of the number of new vehicle sales. Therefore, further research should be conducted to investigate the other factors (13.5%) influencing the number of new vehicle sale.

**Regression model**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | **B** | **Std. Error** | **Beta** | | |
| 1 | (Constant) | 3.253 | .560 | | 7.723 | 0.000 |
| | Price of second hand vehicles | 0.211 | 0.179 | 0.997 | 0.298 | 0.003 |
| | vehicle design | 0.798 | 0.395 | 0.495 | 0.165 | 0.002 |
| | Customer's Tastes | 0.886 | 0.562 | 0.323 | 0.111 | 0.001 |
| | Government Policy | 0.458 | 0.266 | 0.343 | 0.243 | 0.004 |
| | Firm's Country of Origin and Reputation | 0.433 | | | | |

**Source: Research, 2013**

The researcher conducted a multiple regression analysis so as toevaluate the anti- counterfeiting strategies used by pharmaceutical industry in Kenya andthe five variables. As per the SPSS generated table 4.8, the equation ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5\ \varepsilon$) becomes:

**$Y = 3.253 + 0.211X_1 + 0.798X_2 + 0.886X_3 + 0.458X_4 + 0.433X_5 + \varepsilon$**

Where Y is the dependent variable (Number of new vehicle sale), $X_1$ is the Price of second hand vehicles variable, $X_2$ is vehicle design variable, $X_3$ is Customer's Tastes  variable and $X_4$ is Government Policy variable and $X_5$ is Firm's Country of Origin and Reputation variable . According to the regression equation established, taking all factors into account (Price of second

hand vehicles, vehicle design, Customer's Tastes, Government Policy, and Firm's Country of Origin and Reputation) constant at zero, Number of new vehicle salewill be 3.253. The data findings analyzed also show that taking all other independent variables at zero, a unit increase in Price of second hand vehicles will lead to a 0.211 increase in number of new vehicle sale; a unit increase in Vehicle design will lead to a 0.798 increase in number of new vehicle sale, a unit increase in Customer's Tastes will lead to a 0.886 increase in number of new vehicle sale, a unit increase in Government Policy will lead to a 0.458 increase in number of new vehicle sale. This infers that Customer's Tastes contribute more in increasing the number of new vehicle sale in the Kenya Motor industry.

At 5% level of significance and 95% level of confidence, price of second hand vehicles had a 0.003 level of significance; vehicle design showed a 0.002 level of significant, Customer's Tastes showed a 0.001 level of significant, Government Policy had a 0.004 level of significant; hence the most significant factor is regulatory control.

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