



BUSINESS TECHNOLOGY AND PERFORMANCE OF SELECTED AUTOMOBILE FIRMS IN NIGERIA

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Abstract:

This study examined business technology and Automobile performance in Nigeria. The aim of the study is to examine the effect of technology revolution, decision support and research & development on automobile performance in Nigeria. Relevant theoretical and empirical literatures were extensively reviewed. The study was anchored on Technology Acceptance Model (TAM). This research work adopted descriptive research design. The study made use of primary sources of data. The population of study 2093 made up of all the employees of the selected automobile industries in Nigeria. The statistical formula devised by Taro Yamen was employed to determine the sample size of 404. The data generated were analyzed using descriptive statistics, correlation analysis and multiple regression analysis. The hypotheses formulated were tested using T test method. The study revealed that Technology Revolution has a significant effect on Automobile performance in Nigeria. This implies that technology revolution has a positive significant effect on Automobile performance in Nigeria. Decision support has a significant influence on Automobile performance in Nigeria. Showing that Decision support has a significant influence on Automobile performance in Nigeria Research and Development has a significant effect on Automobile performance in Nigeria. The study concluded that business technology has a positive significant effect on Automobile performance in Nigeria. The researcher recommended that. Management of Automobile firms should increase the use of technology revolution since the use of technology revolution has a positive significant effect on Automobile performance in Nigeria. Automobile firms should invest in Decision support that is easy to use because

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it guarantees privacy, affordable charges. Automobile firms should carry out several public enlightenment programs so as to increase the level of awareness of Research & Development since Research & Development have a significant effect on Automobile performance in Nigeria.

Keywords: business technology, performance, automobile

1. Background of the Study

The constant search to ease the burdens/hardships in life has led to many innovative activities and inventive drives. In other words, technology has created the tool and processes to accomplish various tasks that ease human activities and can lead to new products and new ways of doing things. Today, technology is applied in everything that we do. Many businesses are using technology to stay competitive by creating new products and services and using technology to deliver these products and services to their customers.

Imran (2014), believes that, technological advancement is the process of combining and reorganizing knowledge to generate new ideas, but Mumford (2000), is of the opinion that, technological advancement comes from internal advancement which comes from employee capability. Technologies can only lead to increased improved performance when combined with other resources. Nohria and Gulati (1996), technological advancement has enormous influence on employee performance, as such, most technological studies have shown a positive relationship, between a firm's technological advancement and performance, which means that changes or advancement is important for employee performance.

The place of the employee must not be relegated to the background. Jagero and Kemba (2012), hold that training helps the employees to achieve different task of the organization. As a systematic approach, it enables employees to change their behaviors according to the norms and values of the organization. On this note, the skill portal maintains that Information Technology Training provides a diverse set of technological tools and resources used to communicate, to create, disseminate, store and manage information.

Technologies have become so important in the life of organizations that McNamara (2011), viewed IT as the life wire of successful business ventures. Application of technology is capable of enhancing optimal performance in service delivery if appropriately carried out. Optimal utilization of facilities might be achieved if the design is done based on clear understanding of how the service is to be measured. Such measurement includes customers service rate, traffic intensity and the average number of customers in the queue. All these assist to make decisions on the level at which technology can be applied for an optimal performance in organizations.

Aliyu and Tasmin (2012), technology is important in every field. To stay in business, and to meet customers' needs, organizations have to adopt new practices- and new technologies. That is, organizations have to modify and adopt new technologies to

remain competitiveness. Financial institutions remain the largest stakeholders in technology.

Sinkovics and Kim (2014), argued that technology plays a crucial role in managing inter organizational B2B (Business to business) relationships, most importantly among supply chain members across borders. Innoson vehicle manufacturing co. Ltd shortened as IVM is Nigeria automobile and bus manufacturing company founded by Innocent Chukwuma runs a plant in Nnewi in Anambra State.

70% of parts used in production of car is sourced locally, while the rest imported from Japan, China and Germany. He has five sealer fox, minibus. An entrepreneur, he has made a name in Africa automobile by launching African Indigenous motor brand, in October 2010. Innoson unveiled his multibillion naira car assembly factory located in Nnewi his hometown in Southern part of Nigeria.

Carter is a family name from Irish, Scottish, English origin its occupational name given to one that transports goods by cart or wagon. Originally believed to be Gaelic and Celti origins from the name Vtccarter. Carter's Inc a major American designer and marketer of Children's appanel founded in 1865 by William Carter came into automobile business same year, many people have served as president of the company, John J. Carter, Harace A. Carter etc.

1.1 KIA Motors

Kia motor corporation is known as KIA automobile stylized as KIA with headquarter in Seoul South Korea. By December 2015 Kia motors corporation in minority owned by Hyundai. KIA motors was founded in 1944, they have outlets in many countries like America, Europe, Mexico, India likewise Nigeria.

They came to Nigeria in 1976 with the aim of selling their product to over 160million Nigeria. Their product is viable, strong and can stand the test of time.

1.2 Peugeot

Family business that was founded in 1810 manufactured by Coffee mills and bicycles they added motorcycles in 1903, Peugeot produced half the cars used in France. Their product is also strong and can stand test of time, they also outlets and Nigeria is one of them.

2. Statement of the Problem

Machine age brought about the development of methods in business executives, administrative managers and staff. All need to go beyond natural endowment to be able to understand the operations and procedures of these machines, also be able to operate these machines themselves. But only very few individuals and businesses can afford the training required to operate these machines. At the same time, servicing and maintenance of the machines pose a challenge because, they are manufactured in highly technologically advanced countries such as Germany, Japan and so on, and exported to third world countries like ours.

These machines when imported, the user nation lacks the expertise and technical know-how to maintain and service them. This happens because the qualified service personnel required to service the machines were not brought along with the machines nor trained at user countries. The implication is that half-baked technicians are forced to service the machines. Rather than putting it in place or back to use, they spoil it. The destruction causes more damage and expenditure instead of capacity utilization that was to accompany the new technology. therefore, other than progress, that business/has experienced a setback in every dimension. The importance of studying and utilizing the technology to achieve progress becomes an imperative.

The consequent importance of doing business in an advanced technological environment calls for training of employees and personnel in organizations to stay and gain competitive advantage against adversaries. This means that, as technology changes, so does performance, on both the employees and the organization itself. Since business technology is an ever-changing sea it overwhelms stakeholders in business world who are unprepared to change behavior for improved performance.

2.1 Objectives of the Study

The main objective is to investigate business technology and performance of selected automobile firms in Nigeria and other objectives are

- examine the relationship between technology revolution and performance of selected automobile firms in Nigeria.
- determine the relationship between decision support and performance of selected automobile firms in Nigeria.
- examine the relationship between research and development and performance of selected automobile firms in Nigeria.

2.2 Hypotheses of the Study

H₁: Technology revolution has no significant effect on the performance of selected automobile firms in Nigeria.

H₂: Decision support has no significant effect on the performance of selected automobile firms in Nigeria.

H₃: Research and development has no significant effect on the performance of selected automobile firms in Nigeria.

3. Literature Review

Business technology is an emerging disciplinary research area and professional discipline in business administration, it has connection, with other business disciplines like management information system. Technology and innovation management which intends to provide an integrated framework for strategic, uses of technology and digital transformation of organization, just like other areas of management like change management, operation research, strategic management, operation management, organizational behavior, business technology is pulling ahead to stand among equals

(Debassish 2017). Business technology can also be a set of processes and services that unite an enterprise management strategies to extract total business technologies solution values potentials. Guiding principles that guides business technology systems includes execution and risk control that produces business technology capabilities. Effectiveness of business technology measures and capability recorded by business technology maturity by model that have four dimensions, process initial business technology principle dimensions are set of repeatable, flexible and robust processes specified and optimized for efficiency and general business process quality. Organization successful management process are supported by tight organization structure based on responsibility, correct decision and clear understanding of roles includes participative, centralized and need based information, effective decision depends on timely information that are based on data and matrices which should be accurate available, relevant and reliable. Internal information is used across the organization and time, external information crosses functions, industries and extended enterprise partners. Technology = effectiveness technology facilitation process execution, timely information sharing and continuous coordination of organizational layers and elements are implemented through reporting, manual task automation, decision making analysis and management system integration (Steve Clarke 2009) asserts that business technology capability is a competency achieved by combination of business technology dimensions to create repeatable management process.

Governance and organization ensure that business technology decisions are identified and executed to develop organizational structure that managers uses to meet business needs. Technology investments: this will ensure enterprises awareness of current information technology capabilities involving availability resources and future requirements, strategies and planning make sure effective decision making related to technology and business synchronization reducing future development planning and complexity. Strategic enterprise architecture, availability of current and future business environment information, technology essence of change in business and society is the engine that lips innovation

Business technology is applications of science, data, engineering and information for business purposes such as achievement of economic and organizational goals main element of technology is the idea of change and how it can affect business and the society for better. Shock develops when technology happens so fast some individuals find it difficult to cope with the changes or to handles the consequences of change like change in automobile.

Our grandparents, ought, have problems or shock when dealing with internet issues, smartphones, etc. Technology affects on society and business are far reaching. The rise of computer in 20th century changed the shape of business conduct the power and mobility of modern computer seems that workers can do more in less time, business do in minutes what once took weeks and mouths. Programs that help business to run efficiently have added potentials. Technology changes the way you sell and market whatever you sell, your website raises yours profile across the country and the globe.

4. Performance of Automobile in Nigeria

Javier (2002) see performance of business to be equivalent to economy, effectiveness and efficiency of activity performance is the ability to attain goals by using resource in an effective and efficient manner.

Gimenez (2000) views variable to measure performance as profitability, gross profit, return on asset (ROA), return on investment (ROI), return on sale (ROS), revenue growth, market shares, sales growth and operational efficiency.

Performance of automobile firms comprises of actual output measured against organizational goals and objectives, firm involves performance of automobile, four specific areas of firm outcome financial performance, product market performance, shareholders return and international recognition.

Richard (2010) Financial performance is profit being yield by automobile firm return on investment and return on assets operational performance focuses on the business activities of the manager's directed towards satisfying customer's exceptions, preference to gain market share, this aligns all business units within an organization to ensure that they are working together to achieve core business goals and overall effectiveness. Performance is competitive advantage a firm has-that managers are able to build over time to maintain their polices and remain in business.

Karim (20Q6) poses that overall effectiveness performance of business increases a firm's corporate worth and provides sustainable competitive advantage and organization that loses their reputation and competitive advantage to do so at a very high cost,

The objective of any organization is not only to survive but to sustain its existence by improving performance, organization must increase performance to meet the need of competition. Organizational performance is how successfully an organized group of people relates with a particular purpose to perform a function; performance is high when all parts of the organization work together to achieve great results.

Terms that can enhance performance in terms of value includes:

- 1) **Strategic objectives:** this must provide direction in which all within the organization should adhere to, it gives focus and ensure that all work towards same end.
- 2) **Organizational structure:** represents the form in which organization deliver its services who does what, responsibilities and tasks, structure must support strategy just as strategy have regard to the structure.
- 3) **Business performance measures:** this represents the measures by which each area of the organization will be assessed. Each organization has its own measure, this measure must be determined in respect of organization goals and strategies all put in place for achievement of those goals, for this to be achieved information must be easily obtained on time and this requires management information system to be developed for collection of right data in efficient way.

- 4) **Allocation of resources processes:** this involves decision making approach that takes place within the organization, how scarce resources should be shared, e.g money. Time, effort, in a way to achieve objectives.
- 5) **Values, culture, guiding principles of organization:** automobile firm must make sure that culture of the environment where they site their business support the achievement of the strategic objective this will help to draw the best of the people within. Values and guiding principles must support the purpose.
- 6) **Reward structure:** most reinforces the culture and direct efforts to support the achievement of strategic objectives. Reward structure involves bonus on achievement promotion, recognition of having acquired certain skills celebration (recognition) and congratulating team efforts, leave of absence (day off).

All these parts are inter-related and change on one will affect the other. Furthermore, one part performing very poor will negatively affect the other. Organization performance seems to align all these parts to work in harmony in order to achieve great results.

5. Theoretical Framework

This study is anchored on Technology Acceptance Model (Davis, 1989). The Technology Acceptance Model (TAM) Emerging information technology cannot deliver improved organizational effectiveness if it is not accepted and used by potential users. Technology Acceptance Model (TAM) is one of the most successful measurements for computer usage effectively among practitioners and academics (Davis, 1989). TAM is consistent with (Rogers, 1983) theory on diffusion of innovation where technology adoption is a function of a variety of factors including relative advantage and ease of use. Two particular beliefs are addressed through TAM; perceived usefulness and perceived ease of use. Perceived usefulness is defined as being the degree to which a person believes that the use of a system will improve his performance. Perceived ease of use refers to the degree to which a person believes that the use of a system will be effortless. TAM attempts not only for prediction but also for explanation to help researchers and practitioners identify why a particular system may be unacceptable and pursue appropriate steps.

5.1 Empirical Review

Abosedo and Akintola (2015) carried out a research on Research and development of technology facilities' utilization and job performance of secretaries in public and private universities in Ogun State. A structured questionnaire designed by the researchers was administered on a selected sample for this study. The sample constituted 300 secretaries and their superior officers (300) in both public and private Universities respectively. The findings of the study revealed that there was a consequential impact of ICT facilities utilization on secretaries' job performance. The result showed significant relationship between job performance and utilization of ICT facilities, also between secretaries' job performance in public and private Universities. However, no significant

difference was observed between female and male secretaries in the utilization of ICT facilities.

Ayatse (2012) examined the impact of Technology revolution on corporate performance using cement manufacturing firms in Nigeria. Research questions and objectives were stated and literature massively red from other empirical work on contributions of business technology to organizational performance in Nigeria. The population for the study comprised of staffs (6,080) of six cement industries where 375 were selected using Taro Yamane's formula to determine the sample size for the study, however, 300 questionnaires were successfully completed and returned and they were used, conclusion was drawn that business technology positively contributed to corporate performance.

5.2 Research Design

Descriptive research design was applied because of its capability to summarize large quantities of data. This research approach was chosen because of its relevance to this study.

5.3 Area of the Study

This study was carried out in automobile firms in Nigeria. Names of automobile firms are: Peugeot Automobile Nigeria Ltd (PAN), Anambra Motor Manufacturing Ltd (ANAMMCO), Innoson Motor Manufacturing Firms Limited. Volkswagen Nigeria Ltd, National Truck Manufacturers, Nigeria Ltd. The-companies were set up as partnerships with foreign auto manufacturers

5.4 Population of the Study

The population of study was made up five automobile industry in Nigeria. The breakdown of the population is show below.

Table 1: Population for this study

Peugeot Automobile Nigeria Ltd (PAN)	542
Carter Automobile	410
Innoson Motor Manufacturing Firms Limited	441
Volkswagen Nigeria Ltd	260
KIA motors Nigeria Ltd	440
total population for this study	2093

5.5 Sample Size

The total population was 2093 employees of the selected automobile firms in Nigeria. The statistical formula devised by Taro Yamane was employed to determine the sample size. The formula state thus:

$$N = (Zx)^2eN$$

Where n = Sample size

N = Population Figure

e = Margin error and this case= 0.05
Z = Confidence level and for 0.05 it is 1.964
N.B. Target population manufacturing firms is 2093

Substituting the population variables of this study into the formula above, the sample size can be neatly computed as follows:

$$n = (1.964)^2 \cdot 0.05 \times 2093$$
$$n = 403.666$$

Therefore, n = 404

5.6 Method of Data Analysis

The collected data was analyzed using quantitative data analysis methods. Descriptive statistics such as mean and standard deviation was used to present quantitative data in form of tables. Data from questionnaire was coded and entered into the computer using Statistical Package for Social Science (SPSS Version 21) for analysis. It gave means, standard deviations and correlations of each independent and dependent variable. The study also employed Multiple Regression Analysis (MRA) method to evaluate the effect of technology revolution, decision support and research & developments on performance of automobile firms in Nigeria. The regression model is represented as:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_n X_n + e$$

Where:

Y = Automobile Performance (AP);

A = Constant Term;

P = Beta Coefficients;

X_i = Technology Revolution (TR);

X₂ = Decision Support (DS);

X₃ = Research & Development (RD);

e = Error Term.

5.7 Test of Hypotheses

Here, the three hypotheses formulated were tested using t-statistics and significance value of the individual variables in the regression result. The essence of this is to ascertain how significant are the effect of individual independent or explanatory variables on the dependent variables. The summary of the result is presented in the table below.

Table 5: Statistics and Probability Value from the Regression Result

Model	T	Sig.
(Constant)	9.863	.000
Tech Revolution	0.002	.026
Decision Support	2.923	.005
Research/Development	2.870	.004

a. Dependent Variable: AP

Source: Authors Compilation from the Regression Result

Test of Hypothesis One

Variables can collectively explain the variations in Automobile performance.

Ho: Technology Revolution has no significant effect on Automobile performance in Nigeria

Hi: Technology Revolution has a significant effect on Automobile performance in Nigeria

Technology Revolution had a t-statistics of 0.0-02 and a probability value of .026 which is statistically significant. Therefore, we reject the alternative hypotheses and accept the null hypothesis which states that Technology Revolution has a significant effect on Automobile performance in Nigeria. This implies that Technology Revolution has a positive significant effect on Automobile performance in Nigeria

Test of Hypothesis Two

Ho: Decision Support has no significant influence on Automobile performance in Nigeria in Nigeria

Hi: Decision Support has a significant influence on Automobile performance in Nigeria.

Decision Support has a t-statistics of 2.923 and a probability value of 0.005 which is statistically significant. Therefore, we reject the null hypothesis and accept the alternative hypotheses which state that Decision Support system has a significant influence on Automobile performance in Nigeria. This implies that Decision Support system has a significant influence on Automobile performance in Nigeria

Test of Hypothesis Three

Ho: Research and development has no significant influence on Automobile performance in Nigeria in Nigeria

Hi: Research and development has a significant influence on Automobile performance in Nigeria.

Research and development has t-statistics of 2.870 and a probability value of .004 which is statistically significant. Therefore, we reject the null hypothesis and accept the alternative hypotheses which state that Research and development has a significant influence on Automobile performance in Nigeria. This implies that research and development has a significant influence on Automobile performance in Nigeria

6. Discussion of Findings

This work evaluated the effect of Technology revolution on the performance of automobile firms in Nigeria. The data generated were analyzed using descriptive statistics, correlation analysis and multiple regression analysis. Technology revolution has a significant effect on Automobile performance in Nigeria. This finding agrees with the findings of Elbeltagia, Hamad, Moizer and Abou-Shouk (2014) Maikudi (2015) Seyed and Mohammad (2014) The result showed that Technology revolution adoption has significant effect on automobile performance in Nigeria. Also, their results show that there was a statistically significant relationship between technology revolution and gaining competitiveness.

The study also discovers that Decision Support has a significant influence on Automobile performance in Nigeria Omar, Burhan, Hisham, and Sattam (2013) Mohammad and This finding tallies with the findings of Haroon (2012) Ola and Oyewole (2014) studied the effect of applying Decision Support system in corporate performance in Jordanian automobile firms. The study found out that there is a significant effect between the quality of the output of human resources information system and institutional performance in automobile firm and there is a significant effect between training and organizational performance in the automobile industry.

The study found that in Research and Development have a positive significant effect on the performance of automobile industry. This disagree with the findings of Adeyemi, result showed that the independent variables Research and Development were significant joint predictors of customer satisfaction. The finding also disagrees with Ngungi (2013) that concludes that Research and Development has a weak positive and significant influence on the financial performance of automobile industry in Kenya, Flavlan, Torres and Guinaliu 2004, Gan, Clenes, Limsombunchi and Weng, (2006) Research and Development have positive effect on the performance of small and medium scale enterprises. The finding also agrees with Pikkarainen (2004) that Research and Development serves as cheapest delivery services for banking products.

6.1 Summary of Findings

This work evaluated business technology and Automobile performance in Nigeria. The data generated, were analyzed and the following findings were evident that.

- 1) Technology revolution has a significant effect on Automobile performance in Nigeria. This implies technology revolution has a positive significant effect on Automobile performance in Nigeria.
- 2) Decision support has a significant influence on Automobile performance in Nigeria. This implies that Decision support has a significant influence on Automobile performance in Nigeria.
- 3) Research and Development have a significant effect on Automobile performance in Nigeria. This implies that research and development have a significant effect on Automobile performance in Nigeria.

7. Conclusion

This work examines. Business Technology channels used in this study such as Technology revolution, decision support, research and development were found to have significant effect on Automobile firms' performance in Nigeria. Therefore, the study concludes that business technology has a positive significant effect on Automobile performance in Nigeria. It has improved their performance and sales. Through business technology, Automobile firms in Nigeria have performed higher and expand its business services.

7.1 Recommendations

Based on the findings and the conclusion of this study, the study recommends that:

- Management of Automobile firms should increase the use of Technology revolution since the use of it has a positive significant effect on Automobile performance in Nigeria .
- Automobile companies should invest in Decision support that are easy to use, it guarantees privacy, affordable charges and Decision support has a significant influence on Automobile performance in Nigeria.
- Automobile companies should carry out several public enlightenment programs so as to increase the level of awareness of Research and development since it has a significant effect on Automobile performance in Nigeria.

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