

Project Cost and Sales Growth of Select Telecommunication Firms in Nigeria

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DOI: <https://doi.org/10.5281/zenodo.14941617>

Abstract

The researchers examined project cost and sales growth of select telecommunication firms in Nigeria. Quantitative method and survey research design was employed in the study. The population of the study consisted ninety-four project team members selected from three (3) telecommunication firms. A validated adapted questionnaire on a six-point likert-type scale was administered to the participants to collect primary data. A reliability test of the questionnaire was achieved with Cronbach Alpha values was 0.784. Descriptive and inferential statistics were used to analyse the data and test the hypotheses. The result obtained from the analysis revealed that project cost has statistically positive and significant effect on sales growth of the select service firms in Nigeria ($\beta = 0.234$, 3.586, $p < 0.05$). The researchers concluded that project cost affect sales growth of selected telecommunication firms in Nigeria. It was recommended that that cost overrun buffers should be provided during projects implementation and strictly adhered. Further, project cost and overruns should be monitored with efforts made to reduce such within projects.

Keywords: Cost Overrun, Performance, Project Cost, Sales growth, Subscriber, Subscriber Base

Introduction

The activities of information and communication technology (ICT) firms are core to the economic development of nations and they achieve this through the implementation of projects that creates globally useful innovative products amongst several other advantages they offer. However, cost overruns, while implementing projects, are a predominant challenge that seriously jeopardise the improvement in sales hence limiting the overall performance of these firms in the ICT sector of the economy (Ameh, Soyngbe & Odusami, 2010). The challenge of project cost, during implementation,

impacts overall product value to the subscribers, subscriber base and performance of these firms.

Several ICT firms rely upon the use of infrastructure for their operations and projects implementation. These infrastructures are usually imported into the country of operation of these firms. Specifically, in Nigeria project completion costs are high due to government policy on the Naira currency that has made importation of project materials and resources expensive. Thus, majority of the firms do experience modern infrastructural shortages, which are not sufficient to support telecommunication operations in the country, high products costs since the products are consumed by the subscribers with local currency while the infrastructure were purchased in foreign currency (Akinyomi & Tasié, 2011). This inadvertently affected the ultimate cost of products and services being offered to the subscribers, thus also impacting sales growth.

The expected result for these firms while implementing projects is to be able to create products in which the best fit project cost and financial measure considerations are in place for improved delivery of products among the firms in the industry. However, the sector still experiences huge projects costs that directly inhibit increase in subscriber base and sales growth due to high product amounts when released to the market (Johnson & Mulder, 2020). To address this challenge, ICT firms needs to pay much attention to cost reduction while implementing projects so that the overall product cost will be reduced and as such improve affordability for subscribers (Al_Dubai & Alaghbari, 2018).

Project cost estimates form the basis for taking decisions and as such, it is essential that they are as accurate as possible and represent the real cost of project completion. Where it is inaccurate, it can lead to cost overruns and have negative impact on product amount and subscriber preferences (Ubani, Omajeh & Okebugwu, 2015). Further, the ICT sector, have been experiencing a lot of product shift options towards data consumption and also decline in foreign direct investment due to economic instability and unfavourable government policies. The net effect has been that the costs of implementing projects in the sector have continued to be high with products and services increasing becoming difficult for subscribers to afford (NCC Subscriber data, 2018). On this basis, this study reviewed the effect of project cost on the sales growth of selected telecommunication firms in Nigeria.

Statement of the Problem

The telecommunication industry has played a significant role in the development of the Nigerian economy. However, the influence of globalization in the industry has greatly increased the level of competition in the industry (Akingbade, 2014). Studies have been conducted to know strategies that can enhanced firm capabilities with a few that stressed on telecommunication firms. Ogunberu, Olaposi & Akintelu (2016) have established that telecommunication organisations in Nigeria are majorly affected by competitive advantage and Return on investment. Vasista (2017); Mulla & Waghmare (2015); Abdussalam & Arumugam (2015) investigated strategic cost management for construction project success: A systematic study; A study of factors caused for time and cost overruns in construction project and their remedial measures; Effect of cost management strategies on the financial performance of manufacturing companies listed

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on the Nairobi securities exchange; and avoiding cost overruns in construction projects in India. These studies were able to expose the effect of project cost on several performance dimensions but did not explain the effect of project cost on sales growth as identified by Subramani, Sruthi & Kavitha (2014).

Mulla & Waghmare (2015); Shibani & Arumugam (2015); Subramani, Sruthi & Kavitha (2014); Vasista (2017), were able to review project cost and firms' performance and revealed that improper cost management during project implementation can lead to cost overruns. Ogunde *et al* (2017) also revealed that improper project cost management, while implementing projects, was a concern for firms since it impacted their overall performance. It was revealed that a good project cost, if well-managed, can help to ensure that the released products were within planned price competitiveness but often contrary, telecommunication projects were seen to be faced with the challenge of unplanned cost overruns that eventually impacted product pricing and planned sales growth (Shibani & Arumugam, 2015). The study therefore seeks to examine the effect of project cost on sales growth of selected telecommunication firms in Nigeria.

Research Objective

The specific objective of the study was to:

1. Determine the effect of project cost on sales growth of select telecommunication firms in Nigeria.

Hypothesis Development

Ho₁: -Project cost has no significant effect on sales growth of selected telecommunication firms in Nigeria.

Conceptual and Literature Review

Project Cost

Cost is the budgeted expenditure, which the client has agreed to commit for creating or acquiring the desired facility (Chitkara, 2011). Jainendrakumar (2015) provided a more concise definition and defined project cost as the total amount of money needed to execute a project and went on further to explain that it directly impacts profit, which is a subtraction of cost from revenue, profit margin, which is a ration of profit to revenue on the project or product and cash flow, which refers to the movement of cash into and out of a project. Cost is always one of the most important reasons for the success of a project. Generally, most of the main factors influencing project costs are qualitative like importance of a client, the planning ability of project manager, locating methods, and some market conditions (Vasista, 2017).

Cost is the variable that many stakeholders understand as the project performance on completed projects, ongoing projects or projects that are about to commence and often times, influence strategic decision on projects. For effectiveness, it is important to ensure that resources are planned for, materials are managed appropriately on projects, ensure that expenditures on the project are controlled, ensure that allocated cost elements are actually apportioned to the right resource or material on the project and let control

measures be in place to ensure that what was planned with cost is what was achieved (Lee, 2008). The cost of a work unit is comprised of many cost elements. These cost elements include labour costs, material costs, plant and machinery costs, administration costs and other expenses. In order to identify costs associated with an activity on projects, costs characteristics are categorised into direct costs and indirect costs or overhead costs (Odediran & Windapo, 2014).

The characteristics of project cost include; cost planning, which is the act of planning all the cost elements associated with a project delivery. It includes considerations for the project scope and schedule baselines and other factors such as the spending culture of the organisation, inflation rate in the environment in which project spending will be performed; cost estimation, which is the practice of forecasting the price of a complete project with a defined scope. This includes the breakdown of projects into its individual pieces of work and then attaching cost requirements to these pieces of work. Cost estimation is performed at this granular level on human and material resources, duration activities, risk elements, market conditions and the spending policies of the organisation on the project; budget determination aggregates all the individual cost estimates on the project using cost estimation tools. It also considers resource availability for the project; Cost control essentially considers the funding availability as the project implementation progresses using work performance indicators as the project progresses (Jainendrakumar, 2015).

Advantages of project cost include planned estimation of costs, which involve various estimation methods such as parametric estimation, bottom up estimation, top down estimation, programme evaluation and review technique estimation method and analogous estimation method; cost budgeting, which enables abilities to plan in concrete term, resource cost elements, material cost elements. It enables planning for project expenditure and expected revenue upon completion of projects and also when products and services are launched. With the hindsight that resources on projects are allocated cost values, project cost helps to ensure that resources are focused, utilised as needed and deliver results within planned duration. This helps to ensure the effectiveness of resources and efficiency of the project implementation process (Anyanwu, 2013). The disadvantages, however, include the fact that project cost implementation can be quite long especially when applying cost estimation approaches, the project sponsors and market condition may not be patient enough for the project to follow through all the processes involved.

Sales Growth

The sales growth is the ratio showing the increase percentage of the sales during the current year compared to the previous year (Pinem & Dwi, 2015). It is a ratio that is used to measure the amount of an organisation's ability to maintain its economic position in the industry it belongs and economic growth year on year. It compares the percentage increase in sales between current year and previous year. Sales growth is essentially expansion, making the organisation bigger, increasing its market and ultimately making the organisation more profitable (Pinem & Dwi, 2015). Measuring growth is possible by looking at a number of pertinent statistics, such as overall sales, number of staff, market

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share and sales turnover. The interrelation of profitability and growth is illustrated by the fact that a basic operating principle is that growth can best be evaluated by examining profit and total sales. It is important that all firms must remember the need to maintain a balance between profitability and growth: it is crucial for any business to grow as well as be profitable in order to sustain and stay relevant in the marketplace.

The belief is that organisations that are undergoing growth phases have higher rates of survival and they enjoy the benefits associated with economies of scale which in turn will affect their profitability (Fitzsimmons, Steffens & Douglas, 2005). Though present profitability of an organisation may be good, opportunities for growth should always be explored, since this offers opportunities for greater overall profitability and keeps or moves the organisation into the line of sight of analysts and potential or current investors. Profitability and growth go hand in hand in regards to business success. Profit is very important to basic financial survival as a corporate entity, while growth is equally critical to profit and long-term success. Fitzsimmons *et al* (2005) restate the belief that the use of growth as a measure of firm performance is based on the understanding that growth is an antecedent to the attainment of sustainable competitive advantage.

Although increasing sales and income growth may be worthwhile objectives, such actions may not always increase shareholder value. It is the argument of Fitzsimmons *et al* (2005) that the relationship between growth and profitability is very important as sustained growth is only possible through enduring profitability and profits being available for reinvestment in the firm; and whenever growth is not funded through retained earnings, the business firm must rely on additional debt or equity finance.

Project Cost and Sales Growth

Memon, Ismail & Ade (2012) studied time and cost performance in construction projects in Southern and Central regions of Peninsular Malaysia. The researchers employed survey research design. Data gathered from primary source were analysed using correlation analysis. Similarly, using research design in their study, Cantarelli, van Wee, Molin & Flyvbjerg (2012) examined different cost performances - different determinants: The case of cost overruns in Dutch transportation infrastructure projects. Data from primary source were analysed using one-way ANOVA and descriptive analysis. Descriptive statistics assisted in fitting responses into particular categories. Apart from being easy to interpret, percentages were also used to show comparisons between categories of responses while ANOVA was used to determine the effect of the independent variables on the dependent variables. In another study, Vasista (2017) studied strategic cost management for construction project success: A systematic study using exploratory research design. The researchers used content analysis in order to gain a better understanding and possibly enable a better and more insightful interpretation of the results from the quantitative study. Memon, Ismail & Ade (2012) studied cost performance on projects in southern and central regions of Peninsular Malaysia and the findings revealed that 92% of projects considered experienced cost overrun and only 8% of the project could achieve completion within contract duration. The findings revealed that there is a positive relationship between cost and sales growth based on the product output. Similarly, Cantarelli *et al* (2012) reviewed different determinants of cost in the

Dutch transportation infrastructure project and revealed that organisational setup and institutional settings directly impact cost and affect sales growth. The researchers were able to explain that where cost is impacted negatively, overrun is experienced and this will create expensive deliverables that consumers will not be able to afford, thus impacting sales growth.

In addition, Odediran & Windapo (2014) found a positive relationship between project cost and sales growth. The findings indicated that most of the projects are facing the problem of cost overrun due to improper management (planning and estimation) of project cost, which creates expensive project deliverables. Similarly, Azis *et al* (2013) stated that poor cost management and overrun are huge problems and very serious issues when it comes to project cost in both developed and emerging countries. Further, Subramani, Sruthi & Kavitha (2014), while reviewing causes of cost overrun, showed that increase in materials and machine prices, poor design, rework and poor estimation methods are the crucial factors that impact profitability of project deliverables.

Kujala, Brady & Putila (2014), while reviewing challenges of cost management in complex projects, revealed that the most important functions that influence product sales, project performance and profitability are cost management functions of project cost estimates, monitoring the costs of the project, controlling the project costs, calculating and releasing specific contingencies, calculating the margins and analysing profitability. The findings revealed that there is a positive relationship between the two. This was, however, caused by challenges of no accurate information for pricing and setting up appropriate contingencies in the sales phase; prices of resources can vary during a long project and can cause problems of cost estimations; there are more management and integration engineering costs which add up and increase project costs; numerous legal entities cost are also considered in cost estimations and projects are implemented in several business units and thus makes it difficult to calculate project profit accurately. The research explained that cost estimation challenges do lead to cost overruns and eventually expensive projects, expensive products that can impact competitive advantage and reduce sales growth.

Similarly, Vasista (2017) reviewed strategic cost management for construction project success: A systemic study and showed that projects implemented with customer-focused paradigm, high quality deliverables positively impact competitiveness and product sales in the market and provide basis for buy-again opportunities. The findings further revealed that for projects success, project efficiency, project effectiveness in terms of cost performance and contract conditions must be appropriately managed to fall within the planned project scope of the project. In addition, Adjei, Aigbavboa & Thwala (2017), in their review of the challenges of cost control practice in the construction industry, concluded that project manager's personal characteristics, knowledge of cost control process and technology are used in the practice of cost control.

Theoretical Justification

Theoretically, the interaction between project cost and sales growth is supported by the stakeholder theory. Stakeholder theory was propounded by Freeman (1984) and its foundation explains that firms owe an ethical duty to stakeholders above and beyond

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what is required by law and, in particular, ethical duties that require the firm to operate in ways that will foreseeably improve long-term profits. According to Freeman (1984), organisations have various stakeholders whose activities impact on them and vice versa. The stakeholders include governments, investors, suppliers, employees, and customers. These stakeholders contribute inputs to the organisation and expect outputs from it (Donaldson & Preston, 1995) and will act for or against a focal organisation depending on whether their interests are affected positively or negatively. Stakeholder theory further argues that all persons or groups participating in a firm’s activities do so to obtain benefits (Freeman, 1984).

The core assumption of the stakeholder theory is that managers must formulate and implement processes, which satisfy all and only those groups who have a stake in the business. The main task in this process is to manage and integrate the relationships and interests of shareholders, employees, customers, suppliers, communities and other groups in a way that guarantees the long-term success of the firm. A stakeholder approach is very much concerned about active management of the business environment, relationships and the promotion of shared interests in order to develop business strategies (Assudani & Kloppenborg, 2010).

Supporting the theory, Donaldson & Preston (1995) offer four (4) dimensions to the stakeholder theory debate and they are descriptive/empirical, instrumental, normative and managerial. They contend that the first three are aspects of the theory and that these aspects are quite different but they are mutually supportive. The normative part serves as the basis upon which all other aspects of the theory are grounded. Critiquing the theory, Goodpaster (1991) contends that stakeholder theory introduces ethics into management and that the stakeholder idea is typically offered as a way of integrating ethical values into management decision-making. They argued that the stakeholder theory as postulated by Freeman (1984) only referred to stakeholder analysis and as such ended at the analysis stage. This implies that, in the practical or real world, organisations ignore stakeholders when choices and decisions are being made as well as when implementing them.

In explaining the relevance of the theory, Heravi, Coffey & Tribnarsysah (2015) explained that in every project, there are numerous stakeholders whose activities can affect or be affected by the project and who, therefore, have interest in the deliverables or output of the project. In other words, stakeholders can impact the output of the project or can affect or be affected by the project. Further, the main task for telecommunication firms is to manage and integrate the relationships and interests of all shareholders, employees, customers, suppliers, communities and other groups in a way that guarantees the long-term success of a project and the firm.

Conceptual Framework

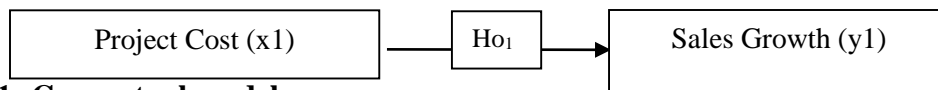


Figure 1: Conceptual model

Source: Researcher’s conceptual model (2019)

The above framework is further illustrated in the model equation below:

$Y_1 = \beta_0 + \beta_1 x_1 + e_i$ ----- equation 1

From equation (1), Y_1 is sales growth and x_1 is project Cost. β_0 is the intercept, β_1 is the Beta coefficient which captures all other variables that could explain sales growth outside the model.

Methodology

The researchers employed quantitative method and survey research design to study the effect of project cost on sales growth of select service firms in Nigeria. The sampling technique used was stratified random sampling technique. The researchers also used proportionate sampling technique. Quantitative method was used in this study since it involves the utilisation and analysis of numerical data using specific statistical techniques in order to support or refute alternative knowledge claims as needed in this study.

The primary population for this study consisted of three (3) select telecommunication firms in Nigeria. These firms were chosen because they were the market leaders in the industry and have the largest number of subscribers in Nigeria (NCC Subscriber Data, 2018). The secondary population for the study included ninety-four (94) project employees in the Information System (IS) department of the selected telecommunication firms. This population was less than two hundred (200) and thus the sample size used for this study was total enumeration as suggested by Ajay & Micah (2014). The sample size assisted in making inferences on the study population, reveal differences where necessary and help eliminate sampling error on the individuals in the population. Table 3.1 below presents the sample size distribution among the firms.

Table 1: Sample Size Distribution

Firm	No. of project employees in the IS department
MTN Nigeria	32
Airtel Nigeria	30
9 mobile	32
Total	94

Source: Human Resource Department of Telecommunication Firms (2019)

Census was used to sample all the items in a universe leaving no element of chance to ensure that highest accuracy is obtained. Census is used when the universe is small and it is no use resorting to a sample survey. The respondents selected should be representative of the population concerned to give better responses representative enough for meaningful analysis and reporting (Kothari, 2004).

Reliability of Research Instrument

The research instrument was subjected to internal consistency reliability to determine how all the constructs of the test relate to the other variables used in the study. Cronbach's alpha test was used to shoe the degree of internal consistency (El Hajjar, 2018). Validity of the instrument was confirmed with AVE and KMO values were greater than 0.5 while the overall Cronbach's alpha reliability coefficient was 0.800. The values for project cost (0.784) and sales growth (0.784) showed that they have high level of consistence.

Method of Data Analysis

During the course of the study, collected data were analysed using descriptive and inferential statistical techniques. The researchers adopted descriptive statistics and linear

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regression to answer the research questions and test the hypothesis stated. These statistical techniques were chosen to be able to determine the strength of the relationship between the variables as shown in the conceptual model. Descriptive statistics as an analytical tool was adopted to analyse demographic data of the respondents of the study since it gives a summary of the key features of the data collected from the sample respondents (Dicksen, 1996) while regression analysis is a quantitative research method used to analyse the relationship that exists between the dependent variable and the independent variables to aid in providing accurate and meaningful conclusions. Regression analysis helps to indicate if the independent variables have a significant relationship with the dependent variables and show the relative strength of the different independent variable's effect on the dependent variable (Sarstedt & Mooi, 2014).

Inferential statistics in general, were used in the study to measure the aspects of the influence of project cost on sales growth, as well as to test the hypothesis formulated for the study. Inferential statistics involve the use of statistical techniques in the testing of hypotheses and drawing inferences from the findings of the study (Adeyemi, 2009). These tools enabled the researcher to establish the effect between the independent variable (project cost) and dependent variable (sales growth) of selected telecommunication firms in Nigeria. The analysis was carried out using the Statistical Package for Social Science (SPSS) version 23 software.

Data Analysis

Data analyses were performed by checking for consistency of filled questionnaire to ensure data cleansing, sorting and coding. Normality, linearity, homoscedasticity and multicollinearity tests were performed on the data collected in line with the study objective. The objective of the study sought to establish the effect of project cost on sales growth of select service firms in Nigeria. Respondents were asked to indicate on a six-point Likert-type scale, their level of agreement on several statements describing project cost in relation to sales growth. Using this scale, the study sought to know respondents' levels of agreement on various statements relating to project cost and sales growth of selected telecommunication firms.

Response Rate

Ninety-four (94) copies of the research questionnaire were distributed to project employees in the information system (IS) department of the select telecommunication firms. Seventy-four (74) copies of questionnaire were duly filled and returned to the researcher, an equivalence of 78.7% response rate which represented a good representation and sufficient enough to make generalisations based on the study sample.

Table 2: Response Rate

Responses	Frequency	Percent (%)
Completed usable copies of questionnaire	74	78.7%
Unusable, unreturned and disqualified questionnaires	20	21.3%
Total	94	100%

Source: Researcher's field survey (2019)

Demographics (n = 94)

The descriptive statistical analysis of the respondents’ opinions is explained in this section first by dealing with the independent variables, followed by the dependent variables. The responses were based on a six point likert-type scale coded with numerical values for ease of analysis. The values assigned were six (6) for very high (VH), five (5) for high (H), four (4) for moderately high (MH), three (3) for moderately low (ML), two (2) for low (L) and one (1) for very low (VL). Results were interpreted using descriptive statistics such as percentages, mean and standard deviation. The mean of the responses using a width of class interval were interpreted as follows: 5.50-6.00 implied very high degree, 4.50-5.49 implied high degree, 3.50-4.49 implied moderately high degree, 2.50-3.49 implied moderately low degree, 1.50-2.49 implied low degree and 0.50-1.49 implied very low degree. A standard deviation of more than one (1) indicated that the responses were widely distributed or no consensus and less than 1 indicated consensus on responses obtained. The summarised responses as presented in the tables 3.

Table 3: Analysis of Descriptive Statistics of Responses of Respondents on Project Cost

Items	Very High	High	Moderately High	Moderately Low	Low	Very Low	Mean	Std. Dev.
Estimation of project cost	21.6%	67.6%	9.5%	1.4%	0.0%	0.0%	5.09	.601
Evaluation of project cash flow	10.8%	47.3%	41.9%	0.0%	0.0%	0.0%	4.69	.661
Planning of cost on all project resources	33.8%	45.9%	20.3%	0.0%	0.0%	0.0%	5.14	.728
Cost control on project	52.7%	35.1%	12.2%	0.0%	0.0%	0.0%	5.41	.701

Source: Field survey data (2019)

The findings showed that 21.6% of the respondents indicated that estimation of project cost was very high, 67.6% indicated high, 9.5% moderately high and 1.4% indicated moderately low. On the average, the respondents indicated that estimation of project cost was high with a mean of 5.09 and standard deviation of 0.601. In addition, the findings indicated that 10.8% of the respondents responded very high to evaluation of project cash flow, 47.3% indicated high and 41.9% moderately high. On the average, the respondents indicated that evaluation of project cash flow was high with a mean of 4.69 and standard deviation of 0.661.

Additionally, 33.8% of the respondents indicated that planning of cost on all project resources was very high, 45.9% indicated high, 20.3% moderately high. On the average, the respondents indicated that planning of cost on all project resources is high

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with a mean of 5.14 and standard deviation of 0.728. Furthermore, the findings showed that 52.7% of the respondents indicated that cost control on project was very high, 35.1% indicated high and 12.2% moderately high. On the average, the respondents indicated that cost control on project was high with a mean of 5.41 and standard deviation of 0.701.

Table 4: Analysis of Descriptive Statistics of Responses of Respondent on Sales Growth

Items	Very High	High	Moderately High	Moderately Low	Low	Very Low	Mean	Std. Dev.
Increase in the number of software deployments (including application downloads) in the last five years	16.2%	60.8%	23.0%	0.0%	0.0%	0.0%	4.93	.627
Acceptance of new software product	20.3%	39.2%	40.5%	0.0%	0.0%	0.0%	4.80	.758
Percentage of positive review of products and services	32.4%	39.2%	27.0%	1.4%	0.0%	0.0%	5.03	.810
Percentage of negative review of products and services	86.5%	13.5%	0.0%	0.0%	0.0%	0.0%	5.86	.344

Source: Field survey data (2019)

According to results in table 4, 16.2% of the respondents indicated that increase in the number of software deployments (including application downloads) in the last five years was very high, 60.8% indicated high and 23% moderately high. On the average, the respondents indicated that increase in the number of software deployments (including application downloads) in the last five years was high with a mean of 4.93 and standard deviation of 0.627.

The finding also indicated that 20.3% of the respondents responded very high to acceptance of new software product, 39.2% indicated high and 40.5% moderately high. On the average, the respondents indicated that acceptance of new software product was high with a mean of 4.80 and standard deviation of 0.758. In addition, 32.4% of the respondents indicated that percentage of positive review of products and services was

very high, 27% indicated high, 1.4% moderately high. On the average, the respondents indicated that percentage of positive review of products and services is high with a mean of 5.03 and standard deviation of 0.810. The findings showed that 86.5% of the respondents indicated that percentage of negative review of products and services is very high, 13.5% indicated high. On the average, the respondents indicated that the percentage of negative review of products and services was high with a mean of 5.86 and standard deviation of 0.344.

Relating results in tables 3 and 4 together, descriptive statistics revealed that a larger percentage of the respondents rated most of the question items of project cost and sales growth high and have similar pattern of increase with grand mean of 5.08 and 5.16, respectively. The findings revealed that the surveyed telecommunication firms control cost on project. Additionally, the findings showed that telecommunication firms plan cost on all project resources and estimates project cost as most of the respondents' perceptions to these items tended towards "high" responses. The findings of the study also revealed high percentage of negative and positive review of products and services. There was also increase in the number of software deployments, including application downloads, in the last five years. These findings, therefore, suggest that project cost may or may not affect sales growth of selected telecommunication firms in Nigeria. This provided an answer to research question three and enabled the researcher to achieve the objective of this study.

Test of Research Hypothesis

H₀: Project cost has no significant effect on sales growth of select telecommunication firms in Nigeria.

To test the hypothesis, linear regression analysis was used. Data for project cost and sales growth were created by adding responses of all items for the variables. The resulting regression coefficients have been used to interpret the direction and magnitude of the relationship. The beta coefficients showed the responsiveness of the dependent variable (sales growth) as a result of unit change in the independent variable (Project Cost). The error term e_i captured the variations that cannot be explained by the model. The dependent variable was sales growth. The Regression results are presented in table 5.

Table 5 : Results of Regression of Project Cost on Sales Growth

Variables	B	Std. Error	t	p-value	R	R²
Constant	16.055	2.712	5.921	0.000	0.453	0.205
Project cost	0.234	0.065	3.586	0.036		

Source: Field survey results (2019)

Table 5 presents linear regression results on the effect of project cost on sales growth of the select telecommunication firms in Nigeria. The result revealed that project cost had a significant positive effect on the sales growth of the select telecommunication firms in Nigeria ($\beta = 0.234$, $t = 3.586$, $p < 0.05$). The t-value showed that the model parameter is statistically significant ($t = 3.586$, $p < 0.05$). The result (table 5) showed that there was a weak positive relationship between project cost and sales growth of selected telecommunication firms in Nigeria ($R = 0.453$).

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The measure of variability (R^2) was 0.205, which showed that project cost account for 20.5% of the variations in sales growth of selected telecommunication firms, while the remaining 79.5% variations in sales growth of selected telecommunication firms were accounted for by other variables not captured in the model. This calls for inquiry through research to find out the other variables that influence sales growth of telecommunication firms in Nigeria. The project cost predictor used in the model captured the variation in the sales growth of selected Telecommunication firms. The simple regression model explaining the variation in productivity due to project schedule is thus expressed as follows:

$$\text{Sales Growth} = 16.055 + 0.234\text{Project Cost} \dots\dots\dots \text{Equation 2}$$

From the regression equation above, it was revealed that holding project cost constant at zero, sales growth of selected telecommunication firms would be at 16.055. The result shows that the regression coefficient of project schedule is 0.234. This is a positive progression and indicates that when project cost is changed by one unit in the measurement scale, sales growth of the select telecommunication firms in Nigeria is positively affected by an improvement of 0.234 units. With the significant value in the model standing at 0.000, the level of significant is less than 0.05 ($p < 0.05$). This means that project cost significantly predicts sales growth of the select telecommunication firms in Nigeria. Overall, the result shows that project costs have a weak positive and significant effect on sales growth of selected telecommunication firms in Nigeria. Therefore, the null hypothesis one (H_01), which states that project cost has no significant effect on sales growth of the select telecommunication firms in Nigeria is hereby rejected.

Discussion

The specific objective of this study was to ascertain the effect of project cost on sales growth of select telecommunication firms in Nigeria. The result of the descriptive analysis for the objective showed that on the average, majority of the respondents asserted that sales growth of select telecommunication firms in Nigeria was high when project cost was high in the select telecommunication firms and there was convergence in the responses of the respondents around the mean. Several studies were in consonance with this finding that project cost has significant effect on sales growth (Memon, Ismail & Ade, 2012; Cantarelli, van Wee, Molin & Flyvbjerg, 2012). Memon, Ismail & Ade (2012) found that 92% of projects considered experienced cost overrun and only 8% of the project could achieve completion within contract duration. The findings revealed that there is a positive relationship between cost and sales growth based on the product output.

Similarly, the findings corroborate the findings of Cantarelli, van Wee, Molin & Flyvbjerg (2012) that reviewed different determinants of cost in the Dutch transportation infrastructure project and were able to reveal that organisational setup and institutional settings directly affect cost and sales growth. The study was able to explain that where cost is impacted negatively, overrun is experienced and this will create expensive deliverables that consumers will not be able to afford, thus impacting sales growth. Moreover, Odediran & Windapo (2014) found a positive relationship between project

cost and sales growth. The findings indicated that most of the projects are facing the problem of cost overrun because of improper management (planning and estimation) of project cost, which creates expensive project deliverables. Similarly, Azis, Memon, Rahman & Karim (2013) state that poor cost management and overrun are the huge problem and very serious issue when it comes to project cost in both developed and emerging countries.

Furthermore, Subramani, Sruthi & Kavitha (2014), while reviewing causes of cost overrun, were able to show that increase in materials and machine prices, poor design, rework and poor estimation methods are the crucial factors that impact profitability of project deliverables. In overall, this current study has found out that project costs have a weak positive and significant effect on sales growth of selected telecommunication firms in Nigeria. Based on the findings of this study in collaboration with the findings from previous studies, the null hypothesis (H_0), which states that project cost has no significant effect on sales growth of the select telecommunication firms in Nigeria, is therefore, rejected.

Conclusion

The empirical study investigated the relationship between project cost and sales growth of select telecommunication firms in Nigeria and formulated a hypothesis that was analysed by simple linear regression. Result from the test of hypothesis revealed that project cost has significant and positive effect on sales growth. Therefore, the researchers concluded that project cost has a positive relationship with sales growth and the more efficient the project cost, the more attractive the products, the more the product is differentiated and the more the sales growth.

Recommendation and Policy Implementation

The findings revealed that project cost for implementing projects is high with the responses indicating that most of the projects faced the problem of cost overrun because of improper management (planning and estimation) of project cost, which created expensive project deliverables. However, the sales growth of the firms is high also. The researchers recommend that cost overrun buffers should be provided for in projects and strictly adhered to in order to monitor the causes of overrun and reduce such within projects.

References

- Abdussalam, S. & Arumugam, K. (2015). Avoiding cost overruns in construction projects in India. *Management Studies*, 3(7-8), 192-202.
- Adeyemi, T. (2009). Inferential statistics for social and behavioural research. *Research Journal of Mathematics and Statistics*, 1(2), 47-54.
- Adjei, K., Aigbavboa, C. & Thwala, W. (2017). Challenges of cost control practice in the construction industry: A literature review. *International Conference on Applied Sciences and Technology (ICAST)*, 4(1), 14 – 24.
- Ajay, S. & Micah, M. (2014). Sampling techniques and determination of sample size in applied statistics research: an overview. *International Journal of Economics, Commerce and Management*, 2(11), 1 – 22.

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- Akingbade, W. A. (2014). Competitive strategies and improved performance of selected nigerian telecommunication companies. *Journal of Entrepreneurship, Management and Innovation*, 10(4), 143-167.
- Akinyomi, O. & Tasié, C. (2011). Impact of telecommunication liberalisation in Nigeria. *International Journal of Management and Enterprise Development* 8(2),125-133.
- Ameh, O., Soyngbe, A., & Odusami, K. (2010). Significant factors causing cost overruns in telecommunication projects in Nigeria. *Journal of Construction in Developing Countries*, 15(2), 49–67.
- Anyanwu, C. (2013). Project cost control in the Nigerian construction industry. *International Journal of Engineering Science Invention*, 2(12), 2319 – 6734.
- Al-Dubai, M. & Alaghbari, M. (2018). Relationship between organisational factors towards project success. *Journal of Internet Banking and Commerce*, 23(2), 20 - 32.
- Assudani, R.& Kloppenborg, J. (2010). Managing stakeholders for project management success: An emergent model of stakeholders. *Journal of General Management*, 36(1), 67-80.
- Azis, A., Memon, A., Rahman, I.& Karim, A. (2013). Controlling cost overrun factors in construction projects in Malaysia. *Research Journal of Applied Sciences, Engineering and Technology*, 5(8), 2621-2629.
- Cantarelli, C., Van Wee, B., Molin, E. & Flyvbjerg, B. (2012). Different cost performance: Different determinants? the case of cost overruns in Dutch transportation infrastructure projects. *Transport Policy*, 22(6), 88–95.
- Chitkara, K. (2011). *Construction project management: Planning, scheduling and controlling*. New Delhi: Tata McGraw-Hill Education.
- Dicksen, P. R. (1996). The static and dynamic mechanics of competitive theory. *Journal of Marketing*, 60, 102 - 106.
- Donaldson, T. & Preston, L. (1995). The stakeholder theory of the corporation: Concepts, evidence and implications. *The Academy of Management Review*, 20(1). 501 – 522.El
- Hajjar, S. (2018). Statistical analysis: internal-consistency reliability and construct validity. *International Journal of Quantitative and Qualitative Research Methods*, 6(1), 27-38.
- Fitzsimmons, J., Steffens, P.& Douglas, E. (2005). Growth and profitability in small and medium sized Australian firms. *SSRN Electronic Journal*, 3(2), 1 - 12.
- Freeman, R. (1984). *Strategic management: A stakeholder approach*. Boston: Pitman/Ballinger.
- Goodpaster, K. (1991). Business ethics and stakeholder analysis. *Business Ethics Quarterly*, 1(1), 53 – 73.
- Heravi, A., Coffey, V.& Trigunarsyah, B. (2015). Evaluating the level of stakeholder involvement during the project planning processes of building projects. *International Journal of Project Management*, 33(5), 1 - 9.
- Johnson, J & Mulder, H. (2020). Go with the flow: Envisioning a successful pipeline of software projects, *Researchgate Journal*, 32, 10 – 16.
- Jainendrakumar, T. (2015). Project cost management based on PMBOK. *PM World Journal*, 4(6), 101 - 113.
- Kothari, C. (2004). *Research methodology: methods and techniques (2nd ed.)*. New Delhi: New age international publishers.

- Krstevski, D. & Mancheski, G. (2017). Costing systems in the telecommunications industry. *Journal of Economic Development*, 3(1), 209 – 219.
- Kujala, J., Brady, T. & Putila, J. (2014). Challenges of cost management in complex projects. *International Journal of Business and Management*, 9(11), 48 – 58.
- Lee, L. (2008). Cost overrun and cause in Korean social overhead capital projects: Roads, rails, airports, and ports. *Journal of Urban Planning and Development*, 134(2), 59 – 62.
- Memon, A., Ismail, A. & Ade, A. (2012). Time and cost performance in construction projects in southern and central regions of peninsular Malaysia. *International Journal of Advances in Applied Sciences*, 1(1), 45-52.
- Mulla, S. & Waghmare, P. (2015). A study of factors caused for time & cost overruns in construction projects and their remedial measures. *International Journal of Engineering Research and Applications*, 5(1), 48-53.
- Nigerian Communications Commission (NCC) subscriber data (2018). Industry overview: Subscribers/Teledensity. Retrieved from <https://www.ncc.gov.ng/stakeholder/statistics-reports/industry-overview>
- Odediran, S., & Windapo, A. (2014). Systematic review of factors influencing the cost performance of building projects. *Conference: In: Proceedings 8th construction industry development board (CIDB) postgraduate conference, university of the Witwatersrand, Johannesburg, South Africa*, 7(1), 11 - 19.
- Ogunberu, A. O. Olaposi T. O. & Akintelu S. O. (2016). Factors affecting the choice of project scope management practices among telecommunication organizations. *Global Journal of Management and Business Research*, 16(3), 12 - 20
- Ogunde, A., Olaolu, O., Afolabi, A., Owolabi, J. & Ojelabi, R. (2017). Challenges confronting construction project management system for sustainable construction in developing countries: Professionals perspectives (a case study of Nigeria). *Journal of building Performance*, 8(1), 1 - 11.
- Okore, O., Akpan, E. & Amade, B. (2017). Project delivery methods in Nigeria: An investigation of the effects of cost overrun factors on project delivery methods in Nigeria. *PM World Journal*, 6(2), 1 – 28.
- Pinem, D. & Dwi, D. (2015). The analysis of company performance and sales growth to the dividend policy at the company go public in Indonesia stock exchange. *International Journal of Business and Commerce* 5(6), 105-116.
- Project Management Institute. (2017). *The PMBOK guide: A guide to the project management body of knowledge (7th ed.)*. Pennsylvania: PMI Publications.
- Sarstedt, M. & Mooi, E. (2014). *A concise guide to market research*. Berlin: Springer.
- Shibani, A. & Arumugam, K. (2015). Avoiding cost overruns in construction projects in India. *Management Studies*, 3(7-8), 192-202.
- Subramani, T., Sruthi, P. & Kavitha, M. (2014). Causes of cost overrun in construction. *IOSR Journal of Engineering*, 4(6), 1 – 7.
- Ubani, E., Omajeh, E., & Okebugwu, O. (2015). Analysis of factors responsible for project cost underestimation in Nigeria. *International Journal of Economics, Commerce and Management*, 3(2), 1 -12.
- Vasista, T. (2017). Strategic cost management for construction project success: A systemic study. *Civil engineering and urban Planning: An International Journal*, 4(1), 41-52.