




Project Scope and Market Share of Selected Telecommunication Firms in Nigeria


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Abstract

To maintain market share, telecommunication operators in Nigeria invest in complex, innovative projects with large budgets and tight timelines. Managing the project scope of these endeavors is a challenge, although crucial to ensuring that viable products are released and guaranteeing market share among these firms. This study examined the project scope and market share of selected telecommunication firms in Nigeria through the quantitative method and survey research. The study employed a validated adapted questionnaire, which used a six-point Likert-type scale and was administered to the study participants to collect primary data. The reliability test of the questionnaire was achieved with Cronbach alpha values and was between 0.734 and 0.756. The population for the study consisted of 94 project team members selected from three telecommunication firms; the sample size was total enumeration. Data analysis and test of hypothesis were conducted with descriptive and inferential statistics. Analysis result revealed that project scope had a statistically positive and significant effect on market share of selected telecommunication firms in Nigeria ($\beta = 0.245$, $t = 5.779$, $p < 0.05$). The study concluded that project scope affected market share of selected telecommunication firms in Nigeria, and, as a result, it is recommended that the scope of projects be controlled, especially through completion timelines. It is also recommended that a project scope definition committee be established at the project initiation stage to review, analyze, recommend, and determine the boundary for each project implementation.

Keywords: *cost overrun, market share, performance, project scope, subscriber base*

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Introduction

People's lives have been profoundly changed by the mobile telecommunications industry, which has revolutionized the way people interact and work. In Nigeria, this sector's explosive rise has widened market horizons and quickened information flow, facilitating quick business transactions. The control of the subscriber base and the entire market share, however, has become greatest amongst the operators developing many projects and products that will ensure continuous dominance of the market. This need requires these operators to embark on complex projects with huge budgets, high quality, and short delivery time (Fashina et al., 2020). Many subscribers show loyalty to innovative products that come from such projects, boosting the market share of the operators. It is imperative, therefore, for telecommunication operators to invest in innovative projects that will help improve their market share performance in their sector of the economy.

Telecommunication operators in Nigeria have been concerned with the current market share they hold, as well as the size of the potential market available to them—to explore for their products or services—with the intention of gaining the largest market share in the country. Embarking on large complex projects to achieve this objective has revealed concerns, such as budget limitations, high risks, and project scope challenges. To ensure these projects are delivered to meet the needs of the market, project scope must be controlled, thereby guaranteeing the project's boundaries are appropriately managed. This challenge is faced by operators, especially when implementing large complex projects with multiple integration points to other third-party systems (Golini et al., 2015).

If the project scope is not properly defined at the beginning of a given project, the likelihood of failure is high. It is therefore expedient for telecommunication operators to ensure that project scope is properly managed, so they can continue to thrive in the market, satisfy sponsors, and fulfill planned objectives. With increasing competition and dynamism in the telecommunication industry, as well as the need to improve cost savings and maximize profits, effective project scope is crucial in the delivery of market-ready products by these operators. To ensure profitability, better return on investment, and improved market share, careful attention must be given to project scope when implementing projects (Ogunberu et al., 2016).

Problem Statement, Research Objective, and Hypothesis Development

Problem Statement

Several researchers (Adler, 2014; Manfio & Lacerda, 2016; Nibyza et al., 2015; Ogunberu et al., 2016) have examined analyses of project scope change management as a tool for project success, suggesting it is relevant to look at how project scope, objectives, and project deliverables are managed in order to meet planned strategic objectives of an organization. Scholarly reviews, however, reveal a dearth in knowledge that relates project scope management to its impact on the market share of the organization, post-launch of the project (Manfio & Lacerda, 2016; Nibyza et al., 2015; Ramadan & Tu, 2012).

Many researchers (Adler, 2014; Manfio & Lacerda, 2016; Nibyza et al., 2015; Ogunberu et al., 2016; Osorio et al., 2014) have revealed that telecommunication firms' performance is influenced by project scope definition at the beginning of project implementation. The objective of this scope definition has been to ensure that the boundaries of the project are defined and known at the beginning of the project to help ensure the entire project execution does not deviate from planned objectives. The studies observed, however, that several firms in the industry frequently experienced the challenge of aligning project scope with corporate objectives. These firms often needed to readjust project scope such that the original project boundary was impacted, engendering project scope creep.

Frequent scope re-alignment often results in products and services not meeting a firm's planned objectives. Satisfying target consumer needs is one example that can affect a firm's market share (Bukit et al., 2018). Adjustments to project scope can create project delays, as well, as time is expended implementing these adjustments, potentially compromising quality and incurring cost overruns. These adjustments directly impact a firm's performance, especially in a competitive market, such as the Nigerian telecommunication sector. Therefore, it has been imperative for firms in the industry to manage project scope and avoid continuous adjustments when implementing projects.

Memon et al. (2014) further supported the need for firms to implement projects as a way to investigate the impact and best approaches to performance improvement through effective project scope management—at the beginning of the project, as well as throughout its execution period. The study explained that firms should avoid the initial tendency of adducing performance observations, such as reduced market share, and shifting consumer taste to poor brand management and consumer purchasing patterns. Instead, firms should also consider—critically—the impact of project management within project implementation to discover if it had an impact in the overall product or service being provided to the consumers.

Research Objective

The specific research objective of this study is to evaluate the effect of project scope on market share of selected telecommunication firms in Nigeria.

Hypothesis Development

Using a questionnaire as a research instrument, several scholars (Akwushola et al., 2012; Manfio & Lacerda, 2016; Mirza et al., 2013; Ogunberu et al., 2016) were able to affirm that project scope management positively influences project completion duration, market share of products, and stakeholders' satisfaction. The studies revealed that when project scope was managed and controlled appropriately during project implementation, most of the time the projects were completed within planned duration, and the projects achieved stakeholders' planned objectives. They also observed that the market share of the products improved.

Nibyiza et al. (2015) revealed a negative relationship between project scope and market share, however, finding that product market share is impacted more by factors such as legal constraints, regulatory constraints, changing stakeholder requirements, and time constraints. Nibyiza et al. (2015) concluded that scope change during project implementation affects product quality, increases allotted completion duration for projects, and increases implementation stress. Therefore, for this study we hypothesized:

H1: Project scope does not have any significant effect on market share of selected telecommunication firms in Nigeria.

Literature Review

Project Scope

Project scope is an important element to understand in any project, as all planning and allocation of resources are aligned to this understanding. In the early stages of a project's lifecycle, an incomplete scope definition is a common source of difficulty in the implementation process (Fageha & Aibinu, 2013). Alternately, a well-defined project scope sets expectations among the project stakeholders; its succinct definition helps the project manager assess needed resources for implementing the project and making realistic commitments.

Suresh (2005) defined project scope as a set of predetermined tasks and activities needed to complete a project successfully. Brandon (2006) defined project scope as “a description of the project work to be performed in terms of the desired results.” Mirza et al. (2013) further defined project scope as specific work required to create project deliverables. For this study, project scope specifically includes the required work needed to create specific project deliverables and to achieve project objectives successfully.

Having a well-defined project scope does not mean having a fixed scope, however. Changes can happen during the project lifecycle, such as unexpected circumstances or changes that arise, possibly resulting in further requests from the client. Nibyiza et al. (2015) explained that project scope can change for a number of reasons, including internal factors (such as stakeholders requiring insight into a problem) or external factors such as government regulations and market conditions. To prepare for project scope changes, prior planning is needed and may ultimately affect or alter the initial planned project scope.

Project Scope Characteristics

Project scope characteristics, according to Nicholas and Steyn (2012), include project justification, wherein the reasons for the project are justified, and describe the business need, what it will address, and the scope of work to be performed.

Project Objectives

Project objectives are document statements that describe a project’s objectives. These objectives are written at a lower level and may include: the duration for achieving individual tasks on the project; product scope description, describing the features and functions of the products, services, or results of the project; and product acceptance criteria, explaining the standards that must be met before the project sponsors and stakeholders can accept the final result of the project. Project objectives can be summarized as the process and criteria for accepting completed products, services, or results.

Project Constraints

Project constraints define various limitations that surround the project. Project constraints may influence the performance of the project and could include: technological constraints, relating to the sequence in which individual project activities must be completed; resource constraints, relating to the lack of necessary resources that may force parallel activities to be performed in sequence; and physical constraints, resulting from contractual or environmental conditions. The primary purpose of project constraints is identifying possible causes (project assumptions) that may delay the completion of the project.

Project Assumptions

Project assumptions are statements that are perceived to be true. Project assumptions are needed for project functioning and can impact any part of a project lifecycle. As such, it is important to document and analyze them.

Project Scope Disadvantages

While project scope is crucial for defining project boundaries and assisting stakeholders with a clear understanding of what the project is about, project scope is still opposed, based on limitations and complexities that are experienced in large enterprise projects. Such complexities create difficulties of misalignment, or scope creep (Ogunberu et al., 2018). Further, in enterprise technology projects, which are quite prevalent among telecommunication firms, the dynamic and consistently pervasive nature of technology innovation necessitates consistent change in technology usage among projects; this implies that project scope is expected to adjust to technology requirement changes for successful project implementation. Additionally, for many firms, there is lack of uniform policy for the assessment and approval of scope changes, which results in inconsistency and undefined boundaries for projects (Suvvari, 2022) and is inconsistent with the expectation of project scope definition.

Market Share

Lancaster and Massingham (2017) defined market share as a business and market orientation, which focuses its organizational efforts on identifying and satisfying customer needs. These researchers suggested that to be successful a business must place its consumers and their needs at the very center of business planning (Lancaster & Massingham, 2017). They also claimed that developing a marketing orientation is a long process and needs to be thought of as an investment (Lancaster & Massingham, 2017). To a large extent, moving to market orientation is changing the organization's culture—its common values relate to the need to highlight service to customers and show a concern for quality in all organizational shared activities. A greater market share increases profits and makes innovation and invention more desirable. International and domestic business firms, of all sizes and varieties, have become increasingly concerned with their market share figures (Cooper & Nakanishi, 1988). Market share commands the attention of business managers as key indices for measuring the performance of a product or brand in the marketplace. Market share is usually controlled by the dominance and consumer preference for the products of the organization and helps to give direction on what the organization needs to focus on to help continual dominance in the market.

Katuse et al. (2018) defined market share as an outcome of the performance of an organization, in the market it is playing, with a tendency to determine its profitability. Thus, production and/or quality improvements can ensure a higher mark-up, increase gain per unit and therefore enable higher profit and better control of the market share. It can thus be argued that an increase in market share can be equated with organizational performance, while a decrease in market share is a manifestation of unfavorable actions by the organization and can be equated as negative performance of the organization.

An organization's dominance of market share creates an opportunity for competitive advantage, as well as guarantees relevance in the marketplace. To gain and help sustain dominance of the market, organizations tend to focus on strategic options, especially in heterogeneous markets. Business owners tend to focus their management direction to creating multiple consumer options, so their products will continue to dominate. As such, organizations invest more in research and development (R&D) of product options that suit their consumers' tastes and behaviors. For example, a heterogeneous market might call for a variety of equivalent solutions, so its R&D efforts and profits are spread across different submarkets. Thus, market size affects profitability of organizations—especially those that require continuous innovation in existing products and services (Lancaster & Massingham, 2017).

Project Scope Management's Influence on Market Share

Fageha and Aibinu (2013) found that project scope management directly influences market share of firms. They explained that where a scope or project boundary is too large—and/or continually changes within a project or projects—the uncertainty leads to scope creep and does not allow for early completion of a project (Fageha & Aibinu, 2013). Then, especially in competitive markets, competitors can easily design similar products in a shorter duration and frustrate the market share. Additionally, poorly managed project scope leads to scope creep—or an entirely different project—which can result in unusable products for consumers (Fageha & Aibinu, 2013). Ineffective scope management hindered the growth of many telecommunication firms through declination in market share, leading to the shutdown of some of them in the past, including Multilinks and Starcomms (Fageha & Aibinu, 2013).

Adler (2014) studied scope change, flexibility, and the management of projects, finding that causes of scope change in project management have been linked to quantitative factors, such as poor definition, estimation, and tracking of cost, time, and quality. Qualitative factors, such as changing goals and expectations of stakeholders, and environmental factors that are external to the project can also come into play (Adler, 2014). The study affirmed that these factors impact the market share of the project products (Adler, 2014).

Manfio and Lacerda (2016) studied the definition of scope in new product development projects and confirmed a positive relationship between project scope and market. This positive relationship is explained by the fact that a well-managed project scope reduces overall cost, improves quality, and allows products and services to be delivered more cheaply, to be good and ready to hit the target consumers, and to be early enough—before competition can come into the market.

While reviewing the relevance of scope management and organizational change management in information technology deployment projects, Memon et al. (2014) found that scope management and organizational change management are two processes that need to be carefully set to right “values,” otherwise the project faces great difficulties (or failure). The study explained that such a failure impacts products, services, and their market share. According to Ogunberu et al. (2016), major factors influencing performance in a telecommunication firm’s project implementation success are: market expansion and project performance, project scope factors of competitive advantage, organizational process assets, expert judgment of the manager, complex activities list, complex project scope statement, limited resources, fast tracking, project delays, client demand, technical skills required, dynamism of technology, and return on investment.

In a study on the application of project scope management practices on project success among telecommunication organizations in Nigeria, Ogunberu et al. (2018) revealed that market expansion, competitiveness, and project success are influenced by project scope factors of customer expectation, customer satisfaction, resource allocation, and project duration. The result of regression analysis of the study showed that four indicators (customer expectations, customers satisfaction, resource allocation, and project duration) out of the six indicators used had positive and significant impact on project successes in the selected firms at 0.05 level of significance. According to the finding of this study, a high success rate is achieved with positive impact on market expansion on projects implemented with scope management practices, while level of success is achieved on projects implemented with no planned scope management practices.

However, Akewushola et al. (2012) found negative correlation between project scope and market share of telecommunication firms in their study, which showed that 39% of projects were successful (delivered on time, on budget, and with required functions and features), 43% of projects faced different challenges during development (late, over budget, and with less required features and functions), and 18% failed (either cancelled prior to completion or delivered and never used).

In other research, Vasista (2017) revealed that the market share of a project product is influenced by fluctuations in cost and scope of the project. The study revealed that when adjustments to scope occur on projects, then there will be direct influence on costs or project expenses and the product’s market share. In a study by Jainendrakumar (2015), the research showed that efficient management of scope and cost, using the Cost Performance Index, creates more likely opportunities for completion of telecommunication projects within budget.

Theoretical Justification

Organizations have diverse stakeholders whose actions affect them and vice versa; these include governments, investors, suppliers, workers, and consumers (Freeman & McVea, 2001). Depending on whether their interests are impacted favorably or unfavorably, stakeholders will act in favor of—or against—a focal organization, providing inputs to the organization and expecting outputs from it (Donaldson & Preston, 1995).

For this study, the underpinning theory on the interaction between project scope and market is the stakeholder theory. The foundation of the theory, which was propounded by Freeman and McVea (2001), states that businesses have an ethical obligation to stakeholders that goes above and beyond what is required by law and that this obligation specifically demand businesses behave in a way that will presumably increase

long-term profits, such as creating innovative products, expanding sales, reducing costs, and managing market share.

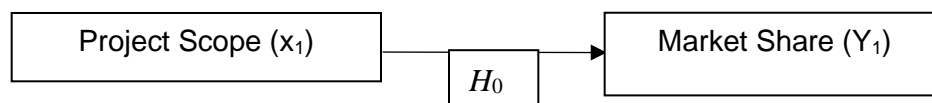
The stakeholder theory further contends that everyone or any group involved in a firm's operations does so in order to profit from it and further promotes a practical, efficient, effective, and ethical way to manage organizations in a highly complex and turbulent environment (Freeman & McVea, 2001). At its core, stakeholder theory focuses on adding value, thus providing opportunity for a firm to expand and increase its market share in the environment in which it operates (Harrison et al., 2015).

The main assumption of stakeholder theory is that managers have to design and execute procedures that cater to the interests of every group having a stake in the company. In order to ensure the long-term success of the company, the primary responsibility in this process is to manage and integrate the relationships and interests of shareholders, employees, customers, suppliers, communities, and other groups. When developing company strategies, a stakeholder approach places a strong emphasis on connections, proactive management of the business environment, and the advancement of common interests (Assudani & Kloppenborg, 2010).

Donaldson and Preston (1995) provide four dimensions (descriptive or empirical, instrumental, normative, and managerial) to the stakeholder theory argument that support the theory; the first three elements appear to differ greatly from one another but reinforce one another, and the normative component of the theory forms the foundation for all other components. Goodpaster (1991) challenges the theory, arguing that the stakeholder idea is usually presented as a means of incorporating ethical principles into management decision making and that stakeholder theory infuses ethics into management. Later research contends that Freeman and McVea's (2001) stakeholder theory was limited to stakeholder analysis and stopped there.

In addressing the relevance of stakeholder theory, Heravi et al. (2015) explained that in every business environment each stakeholder has their own needs and expectations—some of them being more specific and others more extendible to different contexts—and their activities can affect or be affected by the organization. Therefore, the activities and interests of these stakeholders can impact the output of the organization.

Figure 1. *Conceptual Framework*



Note. Obtained from researcher's conceptual model (2019).

The conceptual framework in Figure 1 is further illustrated in Equation 1, below, where Y_1 is market share, and x_1 is project scope, β_0 is the intercept, and β_1 is the beta coefficient, which captures all other variables that could explain market share outside the model. Following is Equation 1:

$$Y_1 = \beta_0 + \beta_1 x_1 + e_i$$

Methodology

This study employed the quantitative method and a survey research design to study the effect of project scope on market share for selected telecommunication firms in Nigeria. The quantitative method was used because it uses specific statistical techniques and numerical data analysis to support or refute alternative knowledge claims, as needed. To collect primary data for the study, an adapted structured questionnaire was used; sampling techniques included stratified random sampling and proportionate sampling.

The primary population for this study consisted of three selected telecommunication firms in Nigeria. These firms were chosen because they were the market leaders in the industry, and they had the largest number of subscribers in Nigeria (Nigerian Communications Commission, 2018). The secondary population included 94 project employees in the information system (IS) departments of the selected telecommunication firms. This population was less than 200, thus this study's sample size was total enumeration, as suggested by Singh and Masuku (2014). The sample size assisted in making population inferences, which revealed differences and helped eliminate individual population sampling errors. Table 1 presents the sample size distribution among the firms.

Table 1. *Sample Size Distribution*

S/N	Firm	IS department project employees (#)
1	MTN Nigeria	32
2	Airtel Nigeria	30
3	9mobile	32
	Total	94

Note. Data obtained from the human resource departments of the telecommunication firms (2019).

Census was used to sample all 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 there is no use resorting to a sample survey. Selected respondents should be representative of the concerned population to give better responses that are representative enough for meaningful analysis and reporting (Kothari, 2004).

Reliability of Research Instrument

In this study, internal consistency reliability was employed to determine how all test constructs in the research instrument relate to the other variables that were used in the study. Cronbach's alpha test was used to show the degree of internal consistency (El Hajjar, 2018). Validity of the instrument was confirmed with AVE and KMO values greater than 0.5, while the overall Cronbach's alpha reliability coefficient was 0.800. The values for project scope (0.756) and market share (0.734) showed that they have a high level of consistency.

Method of Data Analysis

During the course of the study, collected data were analyzed using descriptive and inferential statistical techniques. The study adopted descriptive statistics as an analytical tool to analyze demographic data of the respondents to provide a summary of collected key data features (Dickson, 1996) and used linear regression to answer the research questions (RQs) and test the stated hypothesis. The statistical techniques were chosen to determine the strength of the relationship between the variables, as shown in the conceptual framework model (Figure 1).

Regression analysis, a quantitative research method, was used to analyze the relationship that exists between the dependent variable and the independent variables, aiding in providing accurate and meaningful conclusions. According to Sarstedt and Mooi (2011), regression analysis helps indicate if independent variables have a significant relationship with dependent variables and shows the relative strength of the different independent variable's effect on the dependent variable.

Inferential statistics, in general, were used to measure the aspects of the influence of project scope on market share, 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), enabling the researcher to establish the effect between the independent variable (project scope) and dependent variable (market share) of selected telecommunication firms in Nigeria. The analysis was carried out using the *Statistical Package for Social Science (SPSS, Version 23)*.

Data Analysis

Data analyses were performed by checking for consistency of the completed questionnaire and 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 study objective sought to evaluate the effect of project scope on market share of selected telecommunication firms in Nigeria. Study respondents were asked to indicate, on a six-point Likert-type scale, their level of agreement with several statements, which described project scope in relation to market share. Using this scale, the study sought to know respondents' levels of agreement with various statements relating to project scope and market share of selected telecommunication firms.

Response Rate

The research questionnaire was distributed to 94 project employees in the IS departments of the selected telecommunication firms. Of these questionnaires, 74 copies were duly filled and returned to the researcher, an equivalence of 78.7% response rate (see Table 2), which is a good representation and sufficient enough to make generalizations based on the study sample.

Table 2. Response Rate

Questionnaire responses	(n)	(%)
Completed, usable copies	74	78.7%
Unusable, unreturned, and disqualified	20	21.3%
Total responses	94	100%

Note. Data obtained from the researcher's field survey (2019).

Demographics

The descriptive statistical analysis of the respondents' opinions is explained first in this section, by dealing with the independent variables, followed by the dependent variables. Responses were based on a six-point Likert-type scale, which was coded with numerical values for ease of analysis: 6 = very high (VH); 5 = high (H); 4 = moderately high (MH); 3 = moderately low (ML); 2 = low (L); and 1 = very low (VL). Results were interpreted using descriptive statistics such as percentage, mean, and standard deviation.

Using a width of class interval, the mean (M) of responses was interpreted as follows: 5.50–6.00 implied very high (VH) degree; 4.50–5.49 implied high (H) degree; 3.50–4.49 implied moderately high (MH) degree; 2.50–3.49 implied moderately low (ML) degree; 1.50–2.49 implied low (L) degree; and 0.50–1.49 implied very low (VL) degree. A standard deviation (SD) greater than 1.0 indicated that the responses were widely distributed or there was no consensus; less than 1.0 indicated consensus on responses obtained. The summarized responses are presented in the tables below.

Table 3 shows the statistical output of levels of agreement of respondents to various statements in relation to project scope, with most respondents indicating that project requirements documentation was very high (VH) or high (H), with respondents indicating on average that project requirements documentation was high (H) with a mean (*M*) of 5.85 and standard deviation (*SD*) of 0.358. Results also indicated that the majority of respondents responded very high (VH), high (H), or moderately high (MH) to scope definition. On average, respondents indicated that scope definition from requirements was high (H) with a mean (*M*) of 4.95 and standard deviation (*SD*) of 0.366.

Table 3. Analysis of Descriptive Statistics of Respondents' Responses on Project Scope

	VH* (6 pts.)	H (5 pts.)	MH (4 pts.)	ML (3 pts.)	L (2 pts.)	VL (1 pt.)	<i>M</i>	<i>SD</i>
Project requirements documentation	85.1%	14.9%	0.0%	0.0%	0.0%	0.0%	5.85	.358
Scope definition from requirements	4.1%	86.5%	9.5%	0.0%	0.0%	0.0%	4.95	.366
Creation of work break down structure (WBS) based on requirements	48.6%	23.0%	28.4%	0.0%	0.0%	0.0%	5.20	.860
Mapping of project requirements to stakeholders	21.6%	70.3%	8.1%	0.0%	0.0%	0.0%	5.14	.532
Project scope review and control during project execution	24.3%	27.0%	48.6%	0.0%	0.0%	0.0%	4.76	.824

Note. Data obtained from field survey data (2019); *Key. 6 pts. = very high (VH); 5 pts. = high (H); 4 pts. = moderately high (MH); 3 pts. = moderately low (ML); 2 pts. = low (L); and 1 pt. = very low (VL); mean (*M*), standard deviation (*SD*).

The perception of respondents on creating a work break down structure (WBS) shows that just under 50% of respondents indicated a very high (VH) perception, 23% indicated high (H), and just over 28% indicated moderately high (MH). On average, respondents rated creation of work break down structure (WBS) based on requirements as high (H) with a mean (*M*) of 5.20 and standard deviation (*SD*) of 0.860.

Regarding mapping of project requirements to stakeholders, over 20% of respondents rated very high (VH), with the remaining respondents responding with high (H) or moderately high (MH). On average, respondents rated mapping of project requirements to stakeholders as being high, with a mean (*M*) of 5.14 and standard deviation (*SD*) of 0.532.

Table 3 also shows that over 20% of respondents indicated that project scope review and control during project execution was very high (VH), while the remaining respondents indicated high (H) or moderately high (H). On average, respondents indicated that project scope review and control during project execution was high (H) with a mean (*M*) of 4.76 and standard deviation (*SD*) of 0.824.

Market Share

Market share is one measurement of organizational performance for the telecommunication firms in this study. Table 4 shows the statistical output of level of agreement of respondents with various statements

relating to market share of surveyed telecommunication firms. The results show that under 5% of respondents indicated that increment in number of subscribers in the past 5 years was very high (VH); the majority (over 87%) indicated high (H), and another 8% indicated moderately high (MH). On average, respondents indicated that increment in number of subscribers in the last 5 years was high (H) with a mean (*M*) of 4.96 and standard deviation (*SD*) of 0.349.

Results showed that nearly one-quarter of respondents indicated a very high (VH) rating for increasing the number of subscribers to products and services. Another one-third indicated high (H) ratings, and over 40% used a rating of moderately high (MH). On average, respondents indicated that the increase in the number of subscribers to products and services was high (H) with a mean (*M*) of 4.82 and standard deviation (*SD*) of 0.800.

Results of the descriptive statistics showed that nearly 30% of respondents responded very high (VH) to contribution of overall sales to the industry, whereas over 58% indicated high (H) and over 10% indicated moderately high (MH). Nearly 3% indicated moderately low (ML). On average, respondents indicated that contribution of overall sales to the industry is high (H) with a mean (*M*) of 5.12 and standard deviation (*SD*) of 0.701.

Results of the study showed that over one third of the respondents indicated that demand for more services in a new location was very high (VH). Additionally, over 20% indicated high (H) and over 44% indicated moderately high (MH). Just over 1% of respondents indicated moderately low (ML). On average, respondents indicated that demand for more services in new location was high (H) with a mean of (*M*) 4.86 and standard deviation (*SD*) of 0.911.

Table 4. Analysis of Descriptive Statistics of Market Share

	VH*	H	MH	ML	L	VL	<i>M</i>	<i>SD</i>
Increment in number of subscribers in last 5 years	4.1%	87.8%	8.1%	0.0%	0.0%	0.0%	4.96	.349
Increase in number of subscribers to products and services	24.3%	33.8%	41.9%	0.0%	0.0%	0.0%	4.82	.800
Contribution of overall sales to the industry	28.4%	58.1%	10.8%	2.7%	0.0%	0.0%	5.12	.701
Demand for more services in new location	33.8%	20.3%	44.6%	1.4%	0.0%	0.0%	4.86	.911

Note. Data obtained from field survey data (2019). *Key. 6 pts. = very high (VH); 5 pts. = high (H); 4 pts. = moderately high (MH); 3 pts. = moderately low (ML); 2 pts. = low (L); and 1 pt. = very low (VL); mean (*M*), standard deviation (*SD*).

The descriptive statistics in Tables 3 and 4 reveal that a larger percentage of respondents rated most of the project scope question items and market share high (H) and have a similar pattern of increase with the grand mean (*M*) of 5.18 and 4.94, respectively. Findings revealed that project requirements documentation, creating a work break down structure (WBS) based on requirements, and mapping project requirements to stakeholders are highly implemented in the surveyed telecommunication firms. Most of the respondents' perceptions to these items tended towards high (H) responses. The findings of the study also revealed high (H) contribution of overall sales to the industry and increment in number of subscribers in the last 5 years.

These findings, therefore, suggest that project scope may or may not affect the market share of the selected telecommunication firms in Nigeria, which provides an answer to the research question and enabled the researcher to achieve the objective of this study.

Test of Research Hypothesis

For this study, linear regression analysis was used to test the hypothesis with which we began:

H1: Project scope has no significant effect on market share of selected telecommunication firms in Nigeria.

Data for project scope and market share were created by adding responses of all items for the variables. The resulting regression coefficients were used to interpret the direction and magnitude of the relationship. The beta coefficients showed the responsiveness of the dependent variable (market share) as a result of unit change in the independent variable (project scope). The error term e_i captured the variations that cannot be explained by the model. The regression results are presented in Table 5.

Table 5. Results of Regression of Project Scope on Market Share

Variables	β	SE	T	p-value	R	R ²
Constant	15.202	.844	18.003	0.000	0.289	0.084
Project scope	0.245	0.042	5.779	0.000		

Note. Data collected from field survey results (2019).

Table 5 presents linear regression results on the effect of project scope on market share of selected telecommunication firms in Nigeria. The result revealed that project scope had a significant positive effect on the market share of selected telecommunication firms in Nigeria ($\beta = 0.245$, $t = 5.779$, $p < 0.05$). The t -statistic value showed that the model parameter is statistically significant ($t = 5.779$, $p < 0.05$). The result (Table 5) showed that there was a weak positive relationship between project scope and market share of selected telecommunication firms in Nigeria ($R = 0.289$).

Results ($R^2 = 0.084$) show that project scope accounts for over 8% variation in market share of telecommunication firms, while just over 91% of variation in market share of selected telecommunication firms cannot be explained by the model. This result implies that there are other factors associated with market share of selected telecommunication firms, which have not been considered in the model, and thus require further examination. The simple regression model, shown here in Equation 2, explains the variation in productivity due to the project schedule and is expressed as:

$$\text{Market share} = 15.202 + 0.245 (\text{Project scope})$$

From the regression equation (Equation 2), it was revealed that by holding the project scope constant to 0.000, market share of selected telecommunication firms would be at 15.202. Further, the analyzed data show the project scope regression coefficient was 0.245. This is a positive progression, signifying that when project scope is improved by 1 unit on the measurement scale, market share of selected telecommunication firms in Nigeria will be positively affected by an improvement of 0.2 units. With the significant value in the model standing at 0.000, the level of significance is less than 0.05 ($p < 0.05$). This means that project scope significantly predicts market share of telecommunication firms in Nigeria.

Overall, the study result shows that project scope has a weak positive and significant effect on market share of selected telecommunication firms in Nigeria. Therefore, the null hypothesis (H₁), which states that project scope does not have any significant effect on market share of selected telecommunication firms in Nigeria, is hereby rejected.

Discussion

The specific objective of this study was to evaluate the effect of project scope on market share of selected telecommunication firms in Nigeria. The finding of the hypothesis (H₁) established that project scope has a significant effect on market share of selected telecommunication firms in Nigeria. The result of the descriptive analysis for the objective showed that on average, the majority of respondents claimed that market share is high ($M = 4.94$, $SD = 0.690$), as well as project scope was high ($M = 5.18$, $SD = 0.588$), and the hypothesis (H₁) affirmed that project scope has positive and significant effect on market share of selected telecommunication firms in Nigeria.

This finding—that project scope has significant effect on market share—is supported by several other studies (Adler, 2014; Fageha & Aibinu, 2013; Manfio & Lacerda, 2016). Additionally, this study corroborated the research work of Fageha and Aibinu (2013), who found that project scope management directly influences market share of firms. The study further explained that where the scope or project boundary is too large and continually changing within projects, it leads to scope creep, which does not allow for early completion. Scope creep is especially harmful where the market is competitive and competitors can easily come up with similar products in a shorter duration and frustrate the market share. Fageha and Aibinu (2013) found that project scope management directly influences market share, and when badly managed, it leads to scope creep or an entirely different project and as such creates unusable products for the consumers. Where the scope or project boundary is too large—and continually changing within projects—scope creep disallows early completion.

Likewise, the study on the definition of scope in new product development projects, by Manfio and Lacerda (2016), confirmed a positive relationship between project scope and market. This positive relationship is explained by the fact that a well-managed project scope reduces overall cost, improves quality, and allows products and services to be delivered more cheaply—and good and ready to hit the target consumers early enough before competition can come into the market.

The finding of Akewushola et al. (2012) differed from the Manfio and Lacerda (2016) study. Akewushola et al. (2012) found negative correlation between project scope and market share of telecommunication firms, showing that 39% of projects were successful (delivered on time, on budget with required functions and features), 43% of projects faced different challenges during development, such as being late, or over budget with less required features and functions, and 18% failed. These results mean the projects were either cancelled prior to completion, or delivered and never used. Therefore, based on the findings of this study, which are supported by the findings from contemporary literature, the null hypothesis (H₁) that project scope does not have any significant effect on market share of selected telecommunication firms in Nigeria is rejected.

Conclusion

This empirical study focused on investigating the relationship that exists between project scope and market share of selected telecommunication firms in Nigeria. In this study, we formulated a hypothesis that was analyzed by simple linear regression. Results from the hypothesis test showed that project scope has significant and positive effect on market share. Therefore, we concluded that project scope has a positive

relationship with market share, and the more efficient the project scope, the more efficient the market share of the products are.

Recommendation and Policy Implementation

The study revealed that project scope and market share have a positive relationship. This implies that the clearer the definition of the project scope, the larger the increase in market share. This increase is due to the fact that when a project is well defined, the project can easily be concluded and products and services can be released into the market.

However, where the scope or project boundary is too large—and is continually changing within a given project—the result is scope creep. A too-large scope does not allow for early completion. Thus, where the market is competitive, competitors can easily come up with similar products in a shorter duration and frustrate the market share. Therefore, it is recommended that the scope of projects be controlled, especially through completion timelines.

It is recommended that a project scope definition committee be established at the project initiation stage to review, analyze, recommend, and determine the boundary for each project implementation.

Limitations of the Study

There were limitations in this study. For example, some respondents found it quite difficult to provide responses, as they were not confident enough to provide the needed information. The researchers, with the help of the research assistants, were persistent with visits and calls before completed questionnaires could be retrieved, thus creating time delays. Further, this study recognized that there were other variables that contributed to market share besides the one used in this study. It must be noted, however, that these factors are assumed to be constant in this study. The study also acknowledges that there was no consideration for the combined effect that project scope and other dimensions have on the market share of telecommunication firms in Nigeria. These limitations create potential opportunities for further research.

Contribution to Knowledge & Suggestion for Further Studies

Conceptually, the study developed a new perspective on market share of telecommunication firms in Nigeria through the influence of project scope during project execution. The study explained the criticality of project scope to project execution and how market share of these firms is affected, especially if managed appropriately.

Appropriate project management is accomplished by ascertaining the needs of the project, the needs of the stakeholders, and then determining the project boundaries in the early stages of project execution. The findings of this study indicate that there are other dimensions that influenced market share besides project scope. Further research should be conducted to reveal these dimensions and how they influence market share of telecommunication firms in Nigeria.

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