

Effective Resource Budgeting as a Tool for Project Management

Okon Ndem Eyibio^{1*}, Cross Ogohi Daniel²

¹Department of Business Administration
Nile University of Nigeria,
Abuja, Nigeria

²Department of Business Administration,
Nile University of Nigeria,
Abuja, Nigeria

*Corresponding author's email: okonneyibio [AT] yahoo.com

ABSTRACT--- *In our globalizing world the competition among firms producing the same goods and services have intensified, every organization now seeks to maximize funds and resources while delivering the best results for projects embarked on towards the overall profitability of said organization. Consequently, understanding the relationship between effective resource budgeting and project management is a necessity. The main purpose of this study was to determine if there is a significant relationship between effective resource budgeting and project management. In this research paper, a literature review in the field of resource budgeting and project management was presented, and the papers were discussed for a deeper understanding of state of the art. This research made use of quantitative method to gather data due to the nature of the topic. Survey was used as a method of data collection. It was concluded that resource budgeting is a tool for project management, hence effective resource budgeting goes a long way in ensuring the success of a project. It was recommended that a more comprehensive research covering other states in Nigeria should be carried out so as to contribute to existing knowledge on project management.*

Keywords--- Resource Budgeting, Budgeting, Resource Management, Tools, Project Management

1. INTRODUCTION

Increment in competition is repeatedly pushing several businesses towards more productive processes and slimmer margins. These businesses have to ensure that their resources are used timely and wisely to achieve effective results, they also have to adjust to the ever-changing customer expectations. The key to achieving excellence in every operation in an organization is the ability to manage resources in the most effective and flexible manner.

Resource management can be defined as “the process of using a company’s resources in the most efficient way possible, these resources might include financial resources, tangible resources (equipment, goods) and Labour resources (employees). Resource management can comprise of ideas which involves an individual or department in an organization making sure that the organization they represent has enough physical resources to execute business operations effectively. He/She/They ensure that there is not an overflow of resources so as to avoid wastage. Like the saying goes the wealth of every organization is determined by its ability to manage resources and meet customer expectations.

In this study, more emphasis is placed on human resource, material, financial or tangible resources. Human resource is part of the equation because the importance of human effort as a resource for achieving organizational productivity cannot be over emphasized and its place cannot be taken.

Human resource management can be referred to as the building of capacity, the maintenance of well trained and experienced individuals expected and assigned to carry out several tasks in the organization. It can therefore be classified as an issue of great importance. One of the major issues that cripple the development or growth of an organization is lack of adequate and effective managed human resources. The researcher intends to investigate the role of resource management on organizational growth.

2. STATEMENT OF THE PROBLEM

The issue of inadequate and improper acquisition as well as utilization and maintenance of resource has been a challenge for most organizations over the years; it threatens the growth of the organization and the achievement of the organization’s objectives. Not utilizing resources in companies has brought about serious issues because resources are not properly budgeted or managed. So one can say the absence of proper management is another serious issue faced by organizations

of today and thus the reduction in productivity as individuals no longer have keen interest in their work nor ready to acknowledge the vital resources in the organization.

The private and public enterprises mostly face problems regarding managing material, human and financial resources; there is need for research to be carried out to ascertain the need for effective budgeting of resources which in turn helps project management. There are a lot of issues that comes with managing material resources, ranging from their procurement to stores, issuance to the user segment and finally the finished products. Material resources are usually scarce and should be used wisely for proper discernment.

Different organizations face different types of resource management problems. A type of resource management very crucial to an organization's livelihood is financial resource management. It is often neglected but it has the power to cripple an organization. Lack of proper financial resource management can make an organization lose a huge part of their funds as a result of fraudulent acts, lack of zeal, poor or no management, lack of experienced personnel and inability to use its financial potential. The inferior quality and low quantity of products have shown that the quality of Human resource as well as material resource put in place in some organization are not up to expectations and which in turn causes a reduction the company's productivity and efficiency. When reviewing the existing literature in the area of effective resource budgeting as a tool for project management, it can be found that the area is not thoroughly researched hence the need for this research.

3. OBJECTIVES OF THE STUDY

The main objective of the study is to find out how effective resource budgeting as a tool for project management. The specific objectives of the study are;

- i. To determine if there is a significant relationship between effective resource budgeting and project management
- ii. To identify the benefits of effective resource budgeting in project management

4. RESEARCH HYPOTHESIS

The following null hypotheses were formulated for the study

H₀₁: There is no significant relationship between effective resource budgeting and project management.

H₀₂: There is no benefit effective resource budgeting in project management.

5. LITERATURE REVIEW

5.1 Concept of Resource Budgeting

A resource is a valued possession of an individual, company, state or country in the form of wealth, knowledge, goods and services. A resource is any means of support or anything an individual or a nation uses to support itself. Business Dictionary defines resource as an economic or productive factor required to accomplish a task, or as means to undertake an enterprise and achieve desired outcome.

A resource budget is a resource plan for a defined period. It includes planned resource volumes and resource quantities [6].

According to Business Dictionary, Resource budgeting refers to the process through which quantified resource requirements (amount of capital, amount of material, number of people) are expressed into time phased goals and milestones. Resource budgeting refers to the process of estimating, often itemized, of expected resource and usage for a given period in the future [1].

Resource budgeting is a detailed budgeting of required materials, equipment and services (Ford, 2002). Resource Budgeting involves the allocation, distribution of resources. It implies the more detailed information of precisely how these resources are to be utilized [3].

5.2 Project Management and Planning

A project can be defined as a series of activities and tasks that have specific objectives that are time bound, financial limitations, requires human and non-human resources and in cloud various functions [7]. The primary challenge of project management is to achieve project objectives considering project constraints [13].

This requires applying the required knowledge, skills, tools and techniques to project activities to meet project requirements [11, 12].

According to [11], project management comprises of various processes like identifying the project requirement, addressing and meeting stakeholders' expectations while managing communication between the stakeholders and balancing project limitations.

In a bid to meet the aforementioned requirements, project management must include a combination of special skills, experience and expertise so as to reduce the risk level in a project. Several tools can be used to improve the chances of making the project a success; these tools include planning software, financial software, modelling software etc. It is also a combination of several processes like managing time, cost, change, risk and even quality etc. [12].

Fulfilling the project management requirements and applying its components without planning the project is impossible [8]. In fact, project plan is a proposal of how to do all the project management activities to achieve the project goals. The primary function of the project time plan is to serve the project manager as a map to show the route from project start date to project finish date [9]. Without having the map, project manager cannot accomplish the project management's tasks which result in project failure [9].

Following section provides comprehensive definitions for project planning and its processes.

5.3 Project Planning

Plan is a detailed proposal for doing or achieving something and planning is the process of making plans for something. Planning is a general term which is defined as “the process of deciding what to do and how to do it before performing a required action. Project planning is a set of decisions concerning project execution in order to deliver a desired new product, service or result [14].

6. METHODOLOGY

This research made use of quantitative method to gather data due to the nature of the topic. This method is concerned with the acquisition and interpretation of data that is presented in the form of discrete units. Quantitative research methods are basically applied to the collection of data that is structured and which could be represented numerically. Sample size is used in research to define the number of subjects included in a sample. The sample size for this study is 100 and would be gotten from Experienced Project Managers in several companies. Sampling in quantitative research typically follows the random sampling procedures. Random sampling means that every individual in the population has an equal chance of being selected as a member of the sample. Due to some factors such as availability of resources, time, efforts, the simple random sampling method was used to gather a sample of 100.

Survey was used as a method of data collection because it can scientifically collect quantifiable data that can represent a population without examining the entire population. A questionnaire was used to gather the views of respondents on the subject.

Completed questionnaires were edited for completeness and consistency. The data was then coded and checked for any errors and omissions. Data collected was analyzed using descriptive statistics such as percentages and arithmetic mean scores. Frequency tables, bar charts and histograms were drawn. Data was gathered in form of percentages. An overview of data was represented in the form of charts. Findings in this study were represented using descriptive statistic. Descriptive statistic is the analysis of data that helps describe, show and summarise data in a meaningful way.

7. TEST OF HYPOTHESES

Hypotheses One

H₁: There is a significant relationship between effective resource budgeting and project management.

H₀: There is no significant relationship between effective resource budgeting and project management.

Table 1: TABLE OF CORRELATION EFFECTIVE RESOURCE BUDGETING AND PROJECT MANAGEMENT

CORRELATIONS

		EFFECTIVE RESOURCE BUDGETING	PROJECT MANAGEMENT
Effective Resource Budgeting	Pearson Correlation	1	.536 **
	Sig. (2-tailed)	100	.000
	N		100
Project Management	Pearson Correlation	.536 **	1
	Sig. (2-tailed)	.000	100
	N	100	

** . Correlation is significant at the 0.01 level (2-tailed).

According to above calculations it is observed that amount of correlation coefficient between levels effective resource budgeting is equal to 53.6 per cent and considering that a significant level is less than 5%. Then we can say that there is a positive relationship between effective resource budgeting and project management. This implies that one per cent increase in effective resource budgeting will lead to 53.6% increase in level of project management.

TABLE 2: REGRESSION ANALYSIS TEST OF LEVEL OF EFFECTIVE RESOURCE BUDGETING AND PROJECT MANAGEMENT

MODEL SUMMARY

MODEL	R	R SQUARE	ADJUSTED R SQUARE	STD. ERROR OF THE ESTIMATE
1	.965 ^a	.716	.586	3.79952

a. Predictors: (Constant), effective resource budgeting

Regression coefficient of R = .965 or 96.5% indicate that relationship exist between independent variables and dependent variable. The coefficient of determination $R^2 = 0.716$ which show that 71.6% of variation in level of project management is explained by effective resource budgeting. The adjusted R-square in the table shows that the dependent variable, (level project management) is affected by 58.6% by independent variable (effective resource budgeting). It shows that effective resource budgeting is responsible for project management

TABLE 3: COEFFICIENTS^a

MODEL	UNSTANDARDIZED COEFFICIENTS		STANDARDIZED COEFFICIENTS	T	SIG.
	B	STD. ERROR	BETA		
1 (Constant)	12.310	.901		13.656	.002
Effective Resource Budgeting	1.056	.085	.536	12.426	.000

a. Dependent Variable: level project management

The coefficient of determination for effective resource budgeting is positive (1.056) and is highly significant (0.001) in ensuring level of project management. The p-value of 0.000 is less than the t-statistic value of 12.426 and the standard error value of 0.085. This implies that a unit increase in effective resource budgeting will lead to 1.056 increases in level of project management. Therefore, the null hypothesis is rejected and alternative hypothesis accepted that there is a significant relationship between effective resource budgeting and project management

Hypothesis Two

H₂ There is a benefit effective resource budgeting in project management

H₀: There is no benefit effective resource budgeting in project management

TABLE 4: TABLE OF CORRELATION BETWEEN EFFECTIVE RESOURCE BUDGETING AND PROJECT MANAGEMENT

CORRELATIONS

			EFFECTIVE RESOURCE BUDGETING	PROJECT MANAGEMENT
Effective Resource Budgeting	Pearson Correlation		1	.473**
	Sig. (2-tailed)		100	.000
	N			100
Project Management	Pearson Correlation		.473 **	1
	Sig. (2-tailed)		.000	100
	N		100	

**. Correlation is significant at the 0.01 level (2-tailed).

According to above calculations is observed that amount of correlation coefficient between effective resource budgeting and improving project management is equal to 47.3 per cent and considering that a significant level is less than 5%. Then we can say that there is a positive relationship between effective resource budgeting and improving project management. This implies that one percent increase in effective resource budgeting will lead to 47.3% increase in project management.

TABLE 5: REGRESSION ANALYSIS TEST OF EFFECTIVE RESOURCE BUDGETING AND PROJECT MANAGEMENT

MODEL SUMMARY

MODEL	R	R SQUARE	ADJUSTED R SQUARE	STD. ERROR OF THE ESTIMATE
1	.773 ^a	.624	.722	3.96426

a. Predictors: (Constant), effective resource budgeting

Regression coefficient of R = .773 or 77.3% indicate that relationship exist between independent variables and dependent variable. The coefficient of determination $R^2 = 0.624$ which show that 62.4% of variation in improving project management

is explained by effective resource budgeting. The adjusted R-square in the table shows that the dependent variable, (improving the project management) is affected by 72.2% by independent variable (effective resource management). It shows that there is a benefit effective resource budgeting in project management

TABLE 6: COEFFICIENTS^a

MODEL	UNSTANDARDIZED COEFFICIENTS		STANDARDIZED COEFFICIENTS	t	SIG.
	B	STD. ERROR	BETA		
1(Constant)	15.036	.806		18.644	.000
Performance Appraisal	1.319	.125	.473	10.520	.000

a. Dependent Variable: project management.

The coefficient of determination for effective resource budgeting is positive (1.319) and is highly significant (0.000) in improving project management. The p-value of 0.000 is less than the t-statistic value of 10.520 and the standard error value of 0.125. This implies that a unit increase in effective resource budgeting will lead to 1.319 increases in improving project management. Therefore, the null hypothesis is rejected and alternative hypothesis that there is a benefit effective resource budgeting in project management.

8. CONCLUSION

The main purpose of this study was to determine if there is a significant relationship between Effective Resource Budgeting and Project Management. In this research paper, a literature review in the field of resource budgeting and project management was presented, and the papers were discussed for a deeper understanding of state of the art.

The benefits of effective resource budgeting were highlighted. It was seen that effective resource budgeting can influence project's success rate which shows that there is a significant relationship between effective resource budgeting and project management. One can boldly say that resource budgeting is a tool for project management, hence effective resource budgeting goes a long way in ensuring the success of a project.

9. RECOMMENDATIONS

Considering the above conclusions, the following recommendations can made: Projects are more likely to succeed when their resources are budgeted effectively. Every organization must therefore seek expertise in resource budgeting when handling projects.

It would have been advisable to spread the research study to many states in Nigeria respectively to give a better representation, but this was not done. Thus, the study cannot be generalized to other regions in Nigeria. Time allotted to carry out the study was short. Hence a more comprehensive research covering other states in Nigeria should be carried out so as to contribute to existing knowledge on project management

10. REFERENCES

- [1] Antoson, G. 2004. Uncertainty Resource Management- Myths and Realities. Euram. Rotterdam.
- [2] Ford, R. 2002. Project Management: Planning and Control Techniques, Chichester, Wiley.
- [3] Green, A. H. 2006. An investigation into the concept of resource budgeting Virginia polytechnic institute and State University.
- [4] Herroelen, W. 2005. Project Scheduling—Theory and Practice. *Production and Operations Management*, 14, 413-432.
- [5] Ismail, A., Rashid, K. A. & Hilo, W. J. 2009. The use of Project Management Software in Construction Industry. *Journal of Applied Sciences*, 9, 1985-1989.
- [6] Johansen, A. E. 2006a. Uncertainty Management in Projects – A New Perspective. *Annual journal of International Project Management Association (IPMA)*.
- [7] Kerzner, H. 2009. Project Management : A Systems Approach to Planning, Scheduling, and Controlling (10th Edition), Hoboken, NJ, USA, John Wiley & Sons.
- [8] Lovett, J. & Stauffer, L. Identifying Practices that Reduce Construction Project Durations. 30th annual National Conference of the American Society for Engineering Management 2009, ASEM 2009, 2009. 19-28

- [9] Mantel, S. J. 2001. Project management in practice, New York, Wiley.
- [10] Morris, N., Ugwu, O. & Doran, T. 2005. Causes of delay and cost overruns in construction projects. *International Journal of Project Management*, 12, 254-260.
- [11] PMI 2013. A Guide to the Project Management Body of Knowledge: (PMBOK guide), Atlanta, project management institute.
- [12] Westland, J. 2006. The Project Management Life Cycle: A Complete Step-By-Step Methodology For Initiating, Planning, Executing & Closing A Project Successfully, London, Kogan Page
- [13] Zidane, Y. 2012. Project Change in Large Scale Engineering Projects. master, Norwegian University of Science and Technology.
- [14] Zwikael, O., Pathak, R. D., Singh, G. & Ahmed, S. 2014. The Moderating Effect of Risk on the Relationship Between Planning and Success. *International Journal of Project Management*, 32, 435-441.