

The Effect of Asset Management On Company's Logistical Performance: A Case Of Strong Construction Ltd

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Abstract: - The efficiency of asset management for various reasons has been the focus for companies, Managers and investors doing construction businesses. The main objective of this research is to ascertain the effect of asset management practices on logistical performance within Strong Construction Ltd. To accomplish the main objective, three specific objectives were formulated. These include; to analyze the effect of standards compliance logistical performance within Strong Construction Ltd; to examine the effect of assets maintenance on logistical performance within Strong Construction Ltd and to assess the effect of budget allocation of funds on logistical performance within Strong Construction Ltd. The related theories including the resource based theory and the contingency theory, were used and analyzed. The population of the research are 200 participants and sample size is 66 respondents. The research tools for data collection are questionnaire, interview and documentation. The findings indicated that each unit of compliance with standards do not significantly influence each unit of logistical performance in Strong Construction Ltd. There is increase in each unit of logistical performance when the unit of budget allocation of funds increases at 55.7% in Strong Construction Ltd. There is an increase in each unit of operation performance when the unit of assets maintenance increases at 30.7% in Strong Construction Ltd. Budget allocation of funds affects logistical performance more than assets maintenance in the same perspective compliance with standards in asset management is on the third priority to affect logistical performance in Strong Construction Ltd. The results indicated that there is a positive auto-correlation between asset management (assets maintenance, compliance with standards, budget allocation of funds) and logistical performance in Strong Construction Ltd. This means that asset management can be associated with logistical performance in Strong Construction Ltd. There is a positive strong correlation between asset management and logistical performance ($R=0.993$). The study concludes also that asset management (compliance with standards; assets maintenance and budget allocation of funds) had positive and significant effect cost efficiency in Strong Construction Ltd. This means that as much as asset management is taught to the employees, there was an improvement on logistical performance that will results in cost effective use of resources in Strong Construction Ltd. This indicates that once employees are integrated in asset management system they will have accountability that will contribute to logistical performance toward the achievement of the set goals within Strong construction Ltd.

General Introduction

Background to the study

In modern world, the companies need to use their resources both effectively and efficiently which will lead to the companies' goals achievement. Companies with expensive equipment's such as big factories that produce products, have to pay attention to their daily operating equipment's in avoiding their misuse that can cause them to break-down or less productive that can lead to the failure of meeting both

Company holder's and other stakeholder's goals achievement. Therefore an effective asset management system should be kept that will lead to the good company's logistical performance (Enmon, 2014). Construction industry is one of the largest sectors of the United Kingdom (UK) economy. It contributes almost £90 billion to the UK economy (or 6.7%) in value added, comprises over 280,000 businesses covering some 2.93 million jobs, which is equivalent to about 10% of total UK employment

(James & Isabel, 2013). Over the last five years there have been some dramatic changes in the construction market. Businesses across many parts of the world were faced with unprecedented challenges arising from a number of factors. These included rising prices of raw materials, limited availability of funding, corporate failures arising from the inappropriate management of risks, government spending cuts and falling consumer spending coupled with new accounting standards and regulatory requirements.

According to Jonathan Hook and Michael Cracknell (2013), late payment is also a key obstacle facing construction SMEs. Contractors in the construction industry are often not paid for their work until sometime after it is done. It is not unusual for lower tier supply chain members to have to wait for up to 100 days to receive payment. This harms the company's cash flow and means they often need to rely on borrowing to pay for materials and labor. According to the Construction Trade Survey late payment is the single most important issue affecting construction businesses, with only 5% of specialist contractors being paid within 30 days. The Small Business Survey (2012) also found that, compared to other sectors, late payment is a particular issue for construction contracting SMEs. Some 33% of construction contracting SME employers state that customers paying them later than they require them to in their normal terms of business are a big problem. This is compared to 19% of all SME employers citing late payment as a big problem.

The field of asset management in less developed countries is not well tapped in literature, yet it is a field that is constantly undergoing changes, specifically in construction companies due to various reasons (Arcadis L., Asset Management for the Road sector, 2014). The construction industry significantly affects the economy, the environment and society as a whole. It touches the daily lives of everyone, as quality of life is heavily influenced by the built environment surrounding people. The construction industry serves almost all other industries, as all economic value creation occurs within or by means of buildings or other constructed assets. As an

industry, moreover, it accounts for 6% of global GDP. It is also the largest global consumer of raw materials, and constructed objects account for 25-40% of the world's total carbon emissions (Allan W, 2016).

In Rwanda, for example, the construction industry plays a significant role in the socio-economic development of the nation. This is because it provides the physical infrastructure that is central to the country's economic development. Its activities create business for suppliers and manufacturers and it provides employment to professionals, semi-skilled and unskilled labor. It uses various assets and asset management approaches for its businesses endeavors (Fred, 2018). The construction industry contributes more than 7% to the national GDP with Private and public works are growing at 9.4 % since 2014 (Onyango, 2019).

So what is an asset? What is asset management? According to the ISO, an asset is an item, thing or entity that has potential or actual value to an organization, where the value can be tangible or intangible, financial or non-financial, and includes consideration of risks (Adalia & Marolle, 2017). Because of this, assets are therefore very crucial for both individuals and organizations as they cannot live without them.

Asset management, Kuhn et al. (2011) define it as the broad strategic method of documenting and organizing of the assets as well as using collected information to assist the company in making cost-effective investment decisions. It is a business process as it applies a decision-making framework that covers an extended time. Its approach bases on the best practices borrowed from the areas of economics, engineering, and business.

According to Bloom and Kuhn (2011) remarked, the goal of asset management is cost-effective resource allocation and programming decisions. This is because it allows companies to focus on assets comprehensively. That is to say, it allows the company decision makers to have a wider picture so as to make decisions correctly. Therefore, a well-designed asset management system has to be a vital

element of companies so as to enable the mobility of clients, planning for future improvements, as well as being accountable and responsive to the assets and investments. This is because, it provides the best strategy for future readiness so as to ensure that companies achieve their goals of enhancing safety, increasing the value of assets, as well as expanding economic opportunities.

Asset management is viewed as “a way to plan in advance by substantiating the validity of a decision with information and measurements” Mann ET. al. 1988. It provides components of a rational decision as-goals (review of values and intentions), options (reflection concerning the variety of selections available), facts (the pursuit of information), effects (evaluation of the pros and cons for each decision, and finally the review (the implementation strategy and feedback of conclusions). A properly managed assets result in yielding long term performance as well as value and the reverse leads to under performance and loss for the company. Thus many factors are that affect the management of assets (Nel & Jooste, 2010).

Some factors that affect the asset management are highlighted by Arcadias as:-increasing safety and regulatory requirements, extreme weather conditions due to climate changes, scarce capital reserves due to high operating capital costs, high customer expectations, rapid urbanization, as well as aging infrastructure and new infrastructure development (Arcadis L, 2016).

Statement of the Problem

In Rwanda, the efficiency of asset management for various reasons has been the focus for companies, Managers and investors doing construction businesses. Construction industry in Rwanda is one of the sectors facing many challenges pertaining corporate performance. The government of Rwanda is trying to boost construction industry to have key performing and revenue generating activities of which construction companies are paramount to enhance the economic growth. But how does this work out when the prevalent asset management situation in construction companies in Rwanda is not

determined? This is the reason why we have chosen to examine the effect of asset management on company's logistical performance in Strong construction Ltd.

Research objectives

Specifically; this research achieved the following objectives to:

1. To analyze the effect of standards compliance logistical performance within Strong Construction Ltd.
2. To examine the effect of assets maintenance on logistical performance within Strong Construction Ltd.
3. To assess the effect of budget allocation of funds on logistical performance within Strong Construction Ltd.

Literature Review

Theoretical Review

This section shows the theories that have been reviewed in line with the variables under discussion.

The resource based theory

This theory was propounded by Ainuddin (2011). Stems from the principle that the source of firms' competitive advantage lies in their internal resources, as opposed to their positioning in the external environment. That is, rather than simply evaluating environmental opportunities and threats in conducting business, competitive advantage depends on the unique resources and capabilities that a firm possesses (Barney, 1995). The resource-based view of the firm predicts that certain types of resources owned and controlled by firms have the potential and promise to generate competitive advantage and eventually superior firm performance

Thus, according to the resource-based theory, managing strategically involves developing and exploiting a firm's unique resources and capabilities and continually maintaining and strengthening those resources. The theory asserts that it is advantageous for a firm to pursue a strategy that is not currently being implemented by any other competing firm. Such strategic resources must either be rare, hard to imitate or not easily substitutable. The theory

predicts that possession of strategic resources provides an organization with an opportunity to develop competencies over its rivals hence resulting in good performance. It further predicts that strategic resources and capabilities enable organizations to enjoy excellent performance.

Khalid and Gardiner (2014) supported the Resource-based View (RBV) of the firm is a strategic management theory that is widely used by managers in project management. The RBV has to date been a promising theory that examines how resources can drive competitive advantage, especially project management (PM) capabilities that have been customized to a specific organizational environment and developed over time. However, despite the advantages offered by the RBV to practitioners and scholars alike, the theory has been under attack by opponents claiming that there is an over enthusiasm for what the theory can deliver, especially concerning lack of criteria for generalizability and definitional ailments. Therefore, it gives an overview of the supporters and opponents of the application of the RBV in PM practice and research.

Borrero (2010) criticized the Resource-Based View (RBV) literature seems to raise more questions than it provides answers about strategic choices that enable a firm to generate a competitive advantage (Connor, 2002). Appealing indeed-especially in a theoretical fashion-but often ineffective as a management tool for practitioners, the RBV has provoked ardent debates amongst strategy researchers that are still far from being settled. And yet, despite having been the target of some harsh questioning, this perspective has also influenced much of the last decade's studies on strategy. Areas of great relevance and actuality for the organizational sciences, such as the Knowledge-Based View of the firm Grant (1996) or the Dynamic Capabilities Theory (Eisenhard & Martin, 2000), strongly rely on resource-based strategies, highlighting the main role played by the RBV in the construction of strategic theory. A critical analysis of the RBV that assesses its possible limitations and virtues in the context of current academic and management trends can shed some light not only on the state of the art in RBV-

related studies but also on the bearing that this research might follow in years to come.

The contingency theory

The contingency theory draws on the idea that there is no one or single best way or approach to manage organizations. Organizations should then develop managerial strategy based on the situation and condition they are experiencing.

Thompson (2010), in his classic organization action model portrayed the basic problem of an organization as achieving originality in an uncertain world. Organizations are created to pursue some desired outcomes, yet they are faced with technologies and environment of varying levels of uncertainty which limits their ability to plan and execute actions to achieve the desired ends. Thompson viewed organizations as open systems fundamentally dependent on an environment over which they have only limited control.

Narbandian (2016) supported the contingency theory that in the lineage of organization theory, contingency approaches have incorporated open systems models (Katz & Kahn, 1966). And succeeded the human relations orientation (Roethlisberger & Dickson, 1997) and principles of management (Gulick & Urwick, 2001). While the thrust of professed practice and theory in personnel administration remains at the principles level, some academicians paralleling theoretical trends in organization theory have adopted open systems theory for a better understanding of public personnel management (Leving & Nigro, 1995). Since the notion of merit principles in personnel management represents much more of a normative and institutionalized movement than was embodied in the principles of management one might hesitate to fully endorse the parallel progression between organization theory and theories of personnel management. Nevertheless, if there is some value in the analogy a contingency model of public personnel management seen worth pursuing.

The contingency theory was criticized by Duill (2010) because it revolves around the concept that a single best way of structuring an organization does

not exist. The suitable form is defendant on the type of environment within which an organization exists. Therefore, management may correctly utilize a variety of approaches in order to perform assorted tasks, because different types of organization are required in different types of environments. The management staff in an organization must keep one critical factor in mind. They must make the process of adapting their organization to its environment the underlying principle of all their work.

Empirical review

The asset management highlights that to have an efficient and effective asset management, the organization has to understand and communicate the goals of the asset management program and ensure strong leadership and stakeholder support; recognize the organizational implications of an asset management program to ensure long-term success; implement a framework that integrates all asset related functions, activities, and financials to achieve true ownership across all levels of the organization; strike the right balance between financial performance, risk management, and logistical performance; leverage information technology to enable organizational change, optimize business processes, and support informed decision making; as well as rely on best practices risk-based prioritization, performance-driven asset management, and standards (Arcadis, 2015) The theory emphasized by (Nel.T, 2016) Asset management theoretical framework is that of the asset management value theory. The processes of management if well executed can add value to an organization. The value adding potential of strategic asset management is stressed as: Asset management is being a value-adding pursuit when carried out in a strategic approach. The value is enhanced by productivity strategy processes and through effective and efficient use of an organization's assets. Asset management is the process of organizing, planning,

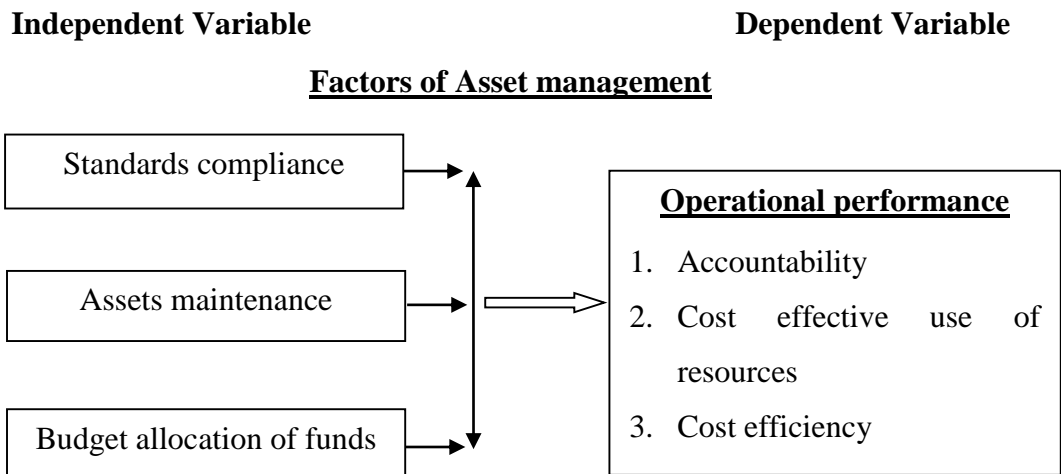
designing and controlling the acquisition, care, maintenance, refurbishment, and disposal of infrastructure and engineering assets to support the delivery of services. It is a systematic, structured process covering the whole life of physical assets. Systematic integration of advanced and sustainable management techniques into a management paradigm or way of thinking, with Primary focus on the long-term life cycle of the asset and its sustained performance, rather than on short-term, day-to-day aspects of the asset. Is a mind-set which sees physical assets as objects and systems which respond to their environment, change and normally deteriorate with use, and progressively grow old then fail / stop working? It is a recognition that assets have a life cycle. It is an approach that looks to get the best out of the assets for the benefit of the organization and/or its stakeholders (Kuhn, 2011).

Asset management refers to applying performance management principles to the management of the construction physical assets and provides a strategic approach for the preservation, rehabilitation and maintenance of these assets. The asset management framework (2004) echoes in and defines asset management as the decision making process that determines what asset to use, where to use it and how to use it. It is the process that weighs up the advantages and disadvantages of utilizing resources in a specific way against the risk of not doing so and not achieving the set goal in the shortest period and most effective way possible. It also involves the performance management (Kumar. A, 2006).

Conceptual Framework

Figure 1. Conceptual Framework

In the conceptual frame work below, all the variables in the study were highlighted. The Figure 1 presents the study conceptual framework as well as showing the hypothetical relationships between the constructs, that is to say.



Source: Researcher (2021)

Research Methodology

Research Design

The study employed a survey research design. This is based on the fact that the study used primary data which was collected from the respondents and this could help to get their perceptions on employees' perceptions of the relationship between asset management and logistical performance of Strong Construction Ltd.

Study Population

The population of this study was composed the employees of the Strong Construction Ltd. The researcher possessively considered a target population of 200 employees from this company, the selected employees are the ones that are aware of asset management from different departments of this company such as production managers, asset managers, project managers, finance managers, accountants, inventory managers, site engineers, site accountants, fleet managers and others that deal with assets of this company.

Sample size

This research used stratified random sampling method in gathering information from the respondents. Under this technique the researcher ensured that the categories of all employees that are aware of asset management are included in the sample. Stratification achieved this by grouping the heterogeneous population into homogeneous subsets which ensure representative. Random sampling technique was then used to sample individual

department within the stratum as it eliminates bias since each member of the target population has an equal chance or probability of being selected.

The Taro Yamane's formula was used to choose a sample size,

$$n = \frac{N}{1 + N(e)^2}$$

Where, n= collected sample size, N = population size, and e = Margin of error (MoE), e = 0.1 based on the research condition, the sample size was; $n = \frac{200}{1+200(0.1)^2} = 66$ respondents.

The sample size of 66 respondents contributed for the data collection on this study

Data collection tools

During the data collection exercise, the researcher obtained a research permission letter from the UoK management. The sources of data of this research were the primary data and secondary data. In primary data, the questionnaire and an interview were used, where in secondary data the documentary review was used.

Summary of Findings, Conclusion and Recommendations

Summary of findings

This sub-section presents the main findings related to the research objectives of the study, as follows:

The effect of standards compliance logistical performance within Strong Construction Ltd.

Findings indicate that goals and policies are set clearly in Strong Construction Ltd (mean 4.15, SD 1.04). In perspective company's goals are well communicated and understood by all staff in Strong Construction Ltd (mean 4.23, SD 0.67). However, staffs of Strong Construction Ltd did not specify whether all involved or not in policies making (3.12, 1.64) in Strong Construction Ltd. Company policies need a certain review based on the current situations (3.79, 1.13).

The above information's indicate that standards in assets management are well defined and communicated to all staffs in Strong Construction Ltd. However, the results showed that not all staffs comply with standards.

The effect of assets maintenance on logistical performance within Strong Construction Ltd.

The findings revealed that the respondents agreed that company has a safe asset protection system (mean 4.64, SD 0.80). Company has its own skilled technicians that responsible and checking the good performance of all machines (mean 4.26, SD 1.00). The findings also showed that there is an update and checks of physical (available) company's assets and tagging (mean 4.59, SD 0.63) on one hand. Strong Construction Ltd.'s assets are maintained regularly on the other hand (mean 3.98, SD 1.13). This indicated that employees from Strong Construction Ltd are aware of the role of assets maintenance on logistical performance field.

The effect of budget allocation of funds on logistical performance within Strong Construction Ltd

The findings showed that the respondents did not specify whether they agree or not that there is involvement of all staff in budget preparation (mean 3.03, SD 1.48). Strong Construction Ltd employees have not been clear about how to make a priority of activities due to funds available (mean 3.83, SD 0.95). The findings also revealed that the employees from company did not specify that if there is a flexibility or not in activities budgeting of company

(mean 3.74, SD 1.52). This indicated that employees agreed that company's resources are allocated in line of policies set (mean 4.33, SD 1.01). This clearly showed that employees from Strong Construction Ltd are aware of the role of budget allocation of funds on logistical performance field.

Conclusion

The findings indicated that each unit of compliance with standards do not significantly influence each unit of logistical performance in Strong Construction Ltd. There is increase in each unit of logistical performance when the unit of budget allocation of funds increases at 55.7% in Strong Construction Ltd. There is an increase in each unit of operation performance when the unit of assets maintenance increases at 30.7% in Strong Construction Ltd. Budget allocation of funds affects logistical performance more than assets maintenance in the same perspective compliance with standards in asset management is on the third priority to affect logistical performance in Strong Construction Ltd.

The results indicated that there is a positive auto-correlation between asset management (assets maintenance, compliance with standards, budget allocation of funds) and logistical performance in Strong Construction Ltd. This means that asset management can be associated with logistical performance in Strong Construction Ltd. There is a positive strong correlation between asset management and logistical performance ($R=0.993$).

The study concludes also that asset management (compliance with standards; assets maintenance and budget allocation of funds) had positive and significant effect cost efficiency in Strong Construction Ltd. This means that as much as asset management is taught to the employees, there was an improvement on logistical performance that will results in cost effective use of resources in Strong Construction Ltd. This indicates that once employees are integrated in asset management system they will have accountability that will contribute to logistical performance toward the achievement of the set goals within Strong construction Ltd.

Recommendations

This research is aimed at improvement of logistical performance in Strong Construction Ltd as such the researcher came up with the following recommendations: Employees should emphasize the aspects of respect of budget line allocation of funds.

Suggestions for the further studies

This study used primary data variables of asset management and logistical performance of Strong Construction Ltd, therefore it is imperative for future researchers to conduct the same study using Strong Construction Ltd. It can also be done by using the secondary data and quantitative variables before the inference is done.

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