

# **Human Factors Performance Assessment as a Prerequisite for Project Completion in Zambia**

*Paper ID: CFP/3520/2022*

---

**Author: Milton Kasanga**

Copperbelt University

Directorate Of Distance Education and Open Learning

P O Box 21692, Jambo Drive, Riverside,

Kitwe - Zambia

Email: [Milton.kasanga1@gmail.com](mailto:Milton.kasanga1@gmail.com)

**Advisor: Mr. Mushtaq Ahmad Malik**

Copperbelt University

Directorate Of Distance Education and Open Learning

P O Box 21692, Jambo Drive, Riverside,

Kitwe - Zambia

---

## **Abstract**

*The present study aims to examine the project completion rates among Zambian contractors. Project completion among contractors in Zambia is influenced by three factors: The repercussions of project failure, The steps that can be taken, as well as project completion rate among contractors in Zambia.*

*The study enrolled a total of 70 individuals from throughout the study area and the data collection instrument was a structured questionnaire. Inferential and comprehensive research this study tested four distinct hypotheses. The findings were analysed using a statistical package for the social sciences (SPSS) and Excel. The study's findings, however, indicate that human factors have a significant impact on project completion, with serious consequences for the contractor, country, citizens, and project owner. Human factors play a role and what we've learned here indicates how hypotheses must be taken seriously for them to be accepted.*

*The study recommends that effective project completion can be achieved by hiring qualified and experienced workers, ensuring adequate strategic planning, and minimising disputes among all parties. It is also recommended to involve a cost engineer in a project, as well as to improve contractor performance on building projects through improved planning, leadership, and communication and all levels of management should be involved in critical decisions affecting the future of the business, the report says. It was suggested that to improve management, control problems, and minimise avoidable delays, the government and other stakeholders should conduct research to identify possible solutions, such as training contractors in project management skills, developing a quality management system, and encouraging mentorship programmes. To complete the project in Zambia, it was necessary to evaluate human factors' performance, and this was the study's main goal.*

**Keywords:** *Human factors, construction, project completion*

## 1) Introduction

Construction projects are started with the goal of meeting the initial quality standard while also meeting the main goals of cost and schedule. A lot of capital projects don't work out or are abandoned at different points in their development, and many that do work out don't do a good job. Performance dimensions may have one or more indicators, and they may be affected by a lot of things, like the project's characteristics and the people who work on it. With effective construction projects, the Zambian economy can be revived and built into a more balanced and self-sufficient state. Projects are only successful when all the stages work together to produce a final product that meets the project's goals of cost, time, and quality. Zambia has always had a hard time building projects on time and on budget. Poor workmanship and contractor incompetence are the main factors that cause projects to go wrong. Most of the construction projects in Zambia have been abandoned or delayed. This has hurt the growth of business for Zambian contractors, which has made it harder for them to start their own businesses. If you have project management skills, you can use them to lessen or increase the impact that any factor has on contractor performance.

## 2) Problem statement

The construction business in Zambia is still having problems. The most important thing is not being able to finish projects. There are a lot of reasons why projects don't work out because of human factors. According to Haupt (2007), the main reason a project doesn't work out is because there are problems and lapses in performance. This is difficult because there are so many different causes and factors that play a role in it. A lack of resources and time are also said to be issues by MoWUD in 2006. Many Zambian contractors lack project management skills and experience. They don't know how to use and manage performance indicators, or how to keep track of them. Before the

project can be finished in Zambia, this investigation will focus on how well people can work together.

## 3) Significance of the study

The study's findings will assist the Zambian government, engineering institutions, non-governmental organizations (NGOs), contractors, and local government in developing a policy action plan.

## 4) Literature review

There has been a lot of debate in the last few years about how human factors affect project completion. Academics and managers, as well as governments and social commentators around the world, have been talking about this a lot. Many of these authors have found that a lot of different things cause projects to fail all over the world. The following are some of the things that can make or break the project:

Effective communication is important in a project environment to avoid information duplication and to make sure everyone who needs to know about the project has the right, up-to-date information at the right time (Souder et al., 1997; Ernst, 2002; Chan et al., 2004; Cooper et al., 2004; Thamhain, 2004; Close, 2006; Raymond & Bergeron, 2008; Weijermars, 2009; Wong et al., 2009; Wi & Jung, 2010). Poor communication is a recipe for disaster, so it's best to avoid it at all costs.

According to Ochieg and Price, the glue that holds a disjointed multicultural project team together is communication, both inside and outside the group (Ochieg & Price, 2010). As a result, projects that have problems with communication are doomed to fail (Frese & Sauter, 2003). Frese and Sauter (2003) say there are four main reasons projects don't work out: bad communication inside and outside the company, bad decision-making, and bad teamwork. All three of these things are connected to communication in some way. As a

result, while the first two require communication between project stakeholders on both the inside and outside of the project, the last two are impossible without it. Ineffective teamwork and a long time to decide are both signs of poor communication. There is not enough teamwork when people don't make decisions together or tell each other what's going on in the team or project. The success of a project is seen because of good communication, and not having it is seen as a sure way to fail. In today's world, an Information System (IS) project can turn into a modern-day Tower of Babel if people don't talk to each other enough (Frese & Sauter, 2003). There will be a lot of confusion on the project team and with other important people if this happens. The project will not work out if this happens.

When a project is in the middle of being done, there may be changes in the schedule, cost, and performance of the project. However, if the right communication isn't done with the people who matter, these changes don't mean anything (Bourne, 2009). People who work on a project face a communication problem, not a control problem, says Bourne (2009). Bourne said that effective cross-cultural communication is the first step to a project's success. The findings of Ochieg and Price back this up (2010). People in Kenya and the UK agreed on one thing when it came to managing cross-cultural communication in a multicultural construction team, according to a study. At the start of projects, project team members should have clear lines of responsibility and processes for resolving their disputes or problems. To set up a clear line of responsibility, the only way to do this is to use the right communication method. If this doesn't happen at the right time, projects will fail. It's important to communicate well with people from different cultures to keep project expectations in check, according to the findings. The best way to build and keep strong working relationships on engineering projects that use a lot of heavy

construction is to use effective communication strategies (Ochieg & Price, 2010). This means that without communication, disagreements and misinformation can't be settled, which allows them to grow, which eventually leads to project failure. There could be problems with project management if people don't talk to each other a lot. This is shown by Ruuska and Teigland's study of project partner conflict (2009). The study found that not talking about a project leads to problems with the project, which then leads to the project not being done. There were a lot of things that led to conflict in a project because there wasn't enough communication, says the study. When the project partners didn't communicate their goals well, the project's management made a project plan that didn't consider the goals of other people. Another reason why the project didn't have a charter was because of how this worked out, too. Because the project manager didn't have good brokering skills, he or she couldn't talk to a lot of different people. Communication is very important if a project is going to work, as this shows.

When a project is going to be a success or a failure, things like careful planning can make all the difference in how well it goes. Careful planning is a must for any project that is going to be successful. There are many reasons why a project doesn't work out. This is one of them. If the project doesn't have a clear plan for how it will achieve its goals and deliverables during the project planning phase, it's likely to fail (Mochal, 2005; Pinto, 2013). To put it simply, projects that don't know what they want to do, as well as the project's start date and end date, are doomed to fail. Project failure is often blamed on poor planning at the start, which Pinto (2013) says is a factor.

According to research, most projects don't work out because they didn't plan well enough. Some studies show that planning and scheduling are to blame for construction projects taking longer than they

should (Odeyinka & Yusif, 1997). In the same study, the Iranian construction industry was found to have the same problem (Pourrastam & Ismail, 2011). The same thing was found to be the cause of project delays in large-scale construction projects (Assaf & AL-Hejji, 2006). According to a survey of contractors and consultants, poor planning is a factor in construction projects taking longer than they should be (Odeh & Battaineh, 2002).

A big reason projects don't work out is when the scope of the project grows unexpectedly and without planning. Project failure is often caused by changes in scope, which researchers say is a big reason (Kaliba et al., 2009; Liu et al., 2011). It's very rare for requirements to be changed by the project's end date, because they are either changed before work starts or changed in the middle of the project's life cycle. When it comes to managing IT projects, this is clearer (Ahonen & Savolainen, 2010).

A quote from Zhang (2013, p. 1): "Project changes have been traditionally thought of as having a large, or even a negative impact on project completion, and in theory, they should not happen if project activities have been well-planned and timed," he says. Changes in project scope are almost always going to happen, and if they do, they can have a negative effect on the project's completion time, especially in complex projects that need a lot of iteration.

The business environment in which construction companies work is always changing around the world. People and businesses must change and adapt to the new environment for them to stay alive (Lee et al. 2001). Contractors must be able to keep improving their performance to compete in the construction business market. This is because users are becoming more demanding, the environment is becoming more aware, and resources are limited (Samson and Lema 2005)

To better understand how projects work in developing countries, many studies have been done. There aren't enough skilled workers, there aren't enough tools, and there aren't enough workers. Faridi and El-Sayegh (2006) say that construction delays in the United Arab Emirates are caused by these things: Client dissatisfaction in the South African building industry was investigated by Hanson et al. (2003). They found that conflict, poor workmanship, and incompetence were to blame. According to Mbachu and Nkando, projects in South Africa don't go well because of poor service and quality (2007). In Zambia, it looks like contractors aren't meeting expectations. A lot of local projects haven't been finished or have been significantly delayed. Local contractors who don't do well have a big impact on their competitiveness (Zulu and Chileshe 2008).

The construction industry is made up of a lot of different people, including owners (clients), contractors, consulting firms, stakeholders, and government agencies. This makes it hard to understand. However, even though the industry is complicated, it is important to the progress and success of society's goals. There are many important industries in the world, and they make up about 10% of GDP in many countries (Navon 2005). People in Palestine, where construction is a big part of the economy, don't seem to be any different. But many local construction projects say that they didn't work out well because of things like not enough materials; too many design and drawing changes; poor coordination between participants; ineffective monitoring and feedback; and a lack of project leadership skills. Many construction projects in the area say that they don't work well (UNRWA 2006). It has been found that the ever-important macroeconomic and political factors have been linked to poor project performance as well (UNRWA 2006 & 2007).

When a project is done, there are many things that can affect its performance indicators, which can have one or more indicators for each one. Project performance is affected by a lot of things, including how the project is organized, how well the team works, and how well the client is represented. Contractors also play a big role, including how well the design team works and how well they communicate with the client (such as weather). Iyer and Jha have found that several factors play a role in how well a project costs (2005). As you can see, these things include the project manager's skills and the support of top management. They also include the project participants' ability to make decisions and communicate with each other, and they must be able to work together and coordinate. However, the most important thing that had the biggest impact on cost performance was how well project participants worked together. Love et al. (2005) found that the cost of a project was not a good predictor of how well it would be done on time. If you're going to look at the performance of Egypt's construction companies, you need to have a reliable way to do so. This includes the owners, shareholders, and funding agencies of these companies.

The examples above show that a wide range of factors can influence different parts of a project's performance. This paper has compiled a long list of factors that affect the performance of construction projects. It builds on the many studies that have already been done (Cheung et al. 2004, DETR 2000, Karim et al. 1999, Dissanayaka and Kumaraswamy 1999, Ofori et al. 2004, Samson et al. 2002, Iyer et al. 2005, Love and Jha 2005, UNRWA 2006 & 2007, Ugwu and Haupt 2007; Enshassi et al. 2007; Alinaitwe et al. 2007) that have already been done.

A study done by Ogunlana et al. (1996) found that building construction projects in Thailand were often delayed because of many different things.

They say that six groups, including owners, designers, construction managers, contractors, and suppliers of materials and resources, can all be blamed for construction delays, which can be caused by any of them. This is based on the work of Abd. Majid and McCaffer (1998), which builds on the work of Ogunlana et al. (1996). They found 57 major causes of project delay and put them into eight groups: project clients and their needs; project finances and consultants and contractors; equipment; material; manpower; and outside factors. According to Sambasivan and Soon (2007), 17.3% of Malaysia's public construction projects were put back by more than a year. Project delays were caused by a lack of planning, poor site management, a lack of contractor experience, a lack of client funds, problems with subcontractors, a lack of materials and labour, a lack of communication between the parties, and mistakes made during the construction phase.

On the other hand, Abd El-Razek et al. (2008) did research on why projects in Egypt take longer than they should. Changes made by the owner or his agent during construction, partial payments during construction, non-use of professional construction/contractual management, contractor financing during construction, and delays in the owner's payment were the top five reasons for the project to be late. Financial and payment problems, bad planning, poor site management and lack of experience were found to be the main causes of long delays in large construction projects in Pakistan by Haseeb et al (2011). Kikwasi (2013) did a questionnaire survey to find out about construction delays in Tanzania. There are many reasons why construction projects take longer than they should. These reasons include frequent design changes and late payments to suppliers, poor project management, lack of coordination between construction stakeholders, and incompetent contractors.

Contractors who are healthy are more likely to finish projects on time and are better able to find and fix problems. Getting a job done on time and with a good reputation is one step ahead of the competition, because clients are hard to get and easy to lose. Contractors' performance can be hurt by their client's level of supervision, especially if the supervisor isn't qualified. Success in a project is based on having a good idea of how much it will cost. Contractors in developing countries need to be able to figure out how much work will cost from the ground up.

Corruption is one of many things that make Nigerian government projects cost more than they should. Corruption has been used as an excuse for people who do things like poverty. Poor planning is caused by goals that aren't clear and a lack of a way to reach them. Nigerian projects often fail because they don't have good project planning, estimation, and scheduling skills. It's common to change the scope of a project. This almost always has a big impact on the whole project. However, it is very rare for these changes to be finished by the due date. Many projects fail because people don't communicate well during the planning and execution stages.

## 5) Methodology

This study used a descriptive survey to find out what people in the construction industry and their customers thought about human factors performance assessment as an important part of project completion. A total of 70 people were surveyed, with 20 clients and 50 construction industry professionals included in the sample. After determining the universe, a non-probability sampling method was used to obtain the necessary number. This does not necessitate random sampling, but it does necessitate an explanation for why some cases or participants were chosen. Since this is a descriptive study, a qualitative strategy was employed.

Researchers conduct a qualitative interview by asking open-ended questions to participants. Postal surveys are useful if your respondents are dispersed across a large geographic area. Because there is no face-to-face interaction between the respondent and the researcher, the questionnaire's design and layout are of utmost significance. The purpose of this study was to analyze human factors performance assessment as a prerequisite for project completion in Zambia. Data were gathered primarily using questionnaires and interview guides.

Results were presented after coding, tabulating, and tabulating the frequencies and percentages. Ethics in research should not be viewed as an afterthought, but rather as an integral part of the research planning and implementation. Respondents' right to withhold their responses was made clear from the start, and their consent was sought right away. Data visualizations such as graphs and charts were created in Microsoft Excel.

## 6) Presentation and Interpretation of Findings

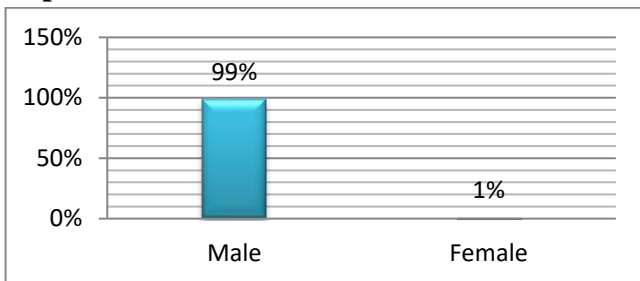
### a. Overview

The main objective of this study was human factors performance assessment as a prerequisite for project completion in Zambia. Findings are mainly presented in form of frequency tables and pie charts. Data collection for this study was done basically through the usage of questionnaire. The study targeted a population of 70, which comprised of 20 clients and 50 professionals in construction industry. Out of the 70 questionnaires circulated all questionnaires were returned representing about 100% of response rate, which was regarded impressive considering the short time given to the respondents. Furthermore, responses were based on the research questions and variables which were related to the study in questions as listed below:

1. What are some of the human factors affecting the project completion among contractors in Zambia?
2. What are the effects of project failure?
3. What measures can be put in place to ensure effective project completion among contractors in Zambia?

### General Information for professionals in the construction industry

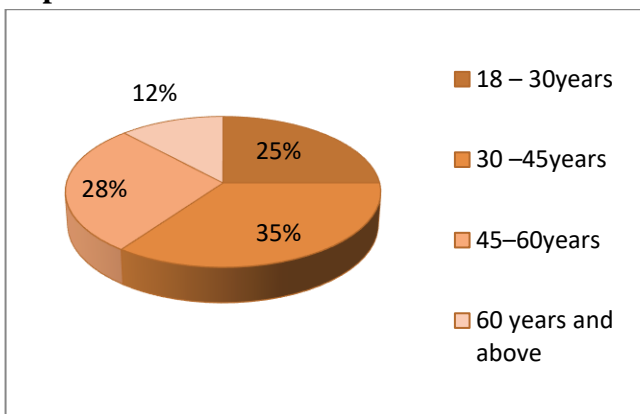
**Figure 1: Percentage distribution of sex of respondent**



Source: Authors' own compilation

According to figure 1, the majority of the respondents such as 99% were male while 1% were female. This means that the majority of the respondents were male.

**Figure 2: Percentage distribution of age of respondent**

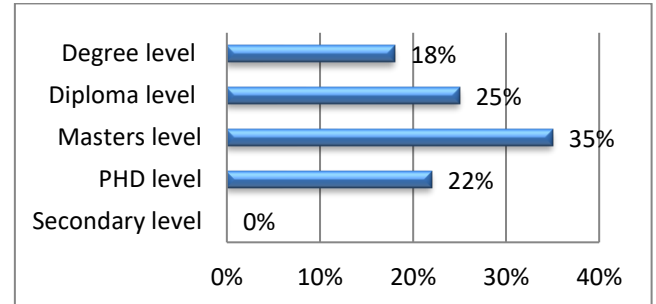


Source: Authors' own compilation

According to figure 2, the majority of the respondents such as 35% were between 30 –

45years, 28% were between 45–60years, 25% were between 18 – 30years while 12% were 60 years and above

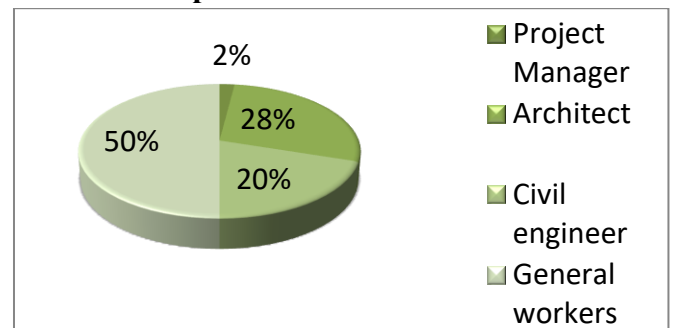
**Figure 3: Percentage distribution of education level of respondent**



Source: Authors' own compilation

According to figure 3, the majority of the respondents such as 35% were master's holders, 25% were diploma holders, 22% were Ph.D. holders while 18% were degree holders.

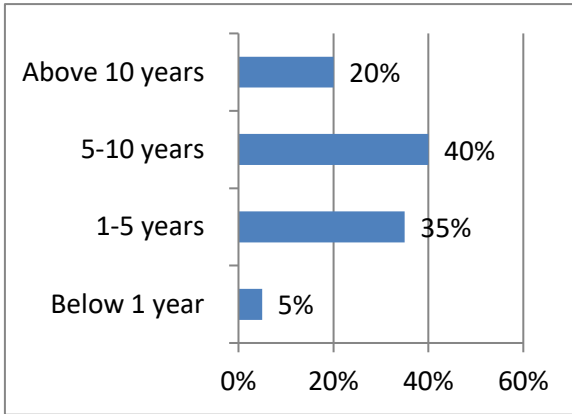
**Figure 4: Percentage distribution of positions construction professionals' hold.**



Source: Authors' own compilation

According to figure 4, the majority of the respondents such as 50% were general workers, 28% were Architects, 20% were civil engineers while 2% were project managers.

**Figure 5: Percentage distribution of the number of years respondents have been working in construction.**

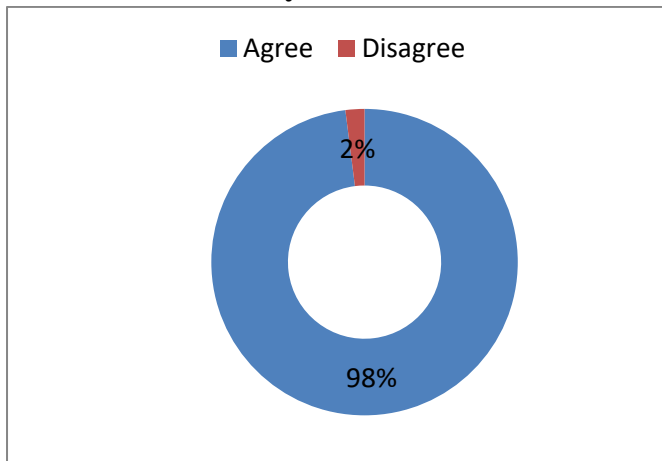


Source: Authors' own compilation

According to figure 5, the majority of the respondents such as 40% have worked for the construction industry between 5 – 10 years, 35% between 1 – 5 years, 20% above 10 years while 5% below 1 year.

### Human factors affecting project completion among contractors in Zambia

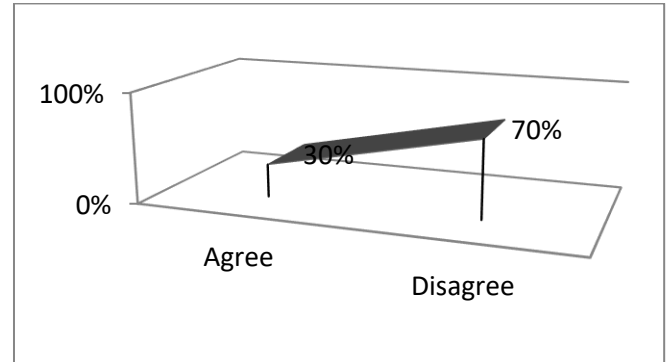
**Figure 6: Percentage distribution of human factors that affect project completion in the construction industry**



Source: Authors' own compilation

According to figure 6, the majority of the respondents agreed that there are human factors that affect project completion in the construction industry while 2% disagreed.

**Figure 7: Percentage distribution if professionals in construction industry have been involved in projects that were abandoned before completion due to the human factors.**



Source: Authors' own compilation

According to figure 7, the majority of the respondents such as 70% disagreed that they have never been involved in projects that were abandoned before completion due to human factors while 30% agreed.

**Table 1: Percentage distribution of some of the human factors that affect project completion**

Human factor	Response
Lack of communication	15%
Lack of management skills	25%
Lack of planning	20%
Lack of coordination between client and project team	19%
Unclear project tasks and objectives	17%
Poor project estimation	4%

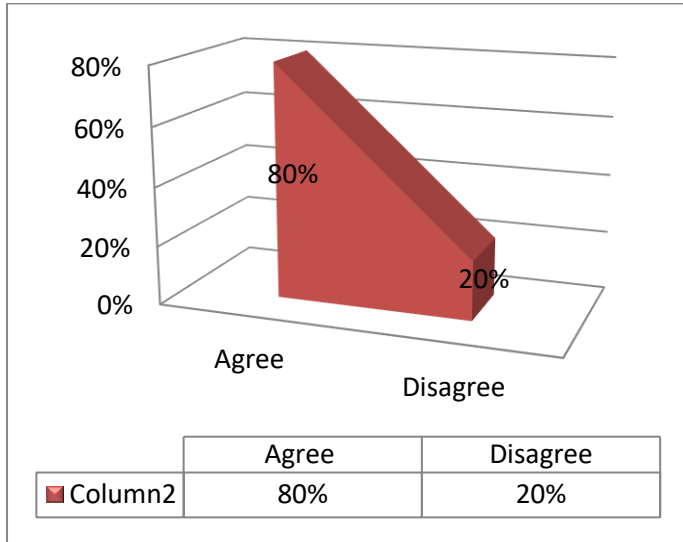
Source: Authors' own compilation

According to table 1, the majority of the respondents such as 25% responded that lack of management skills is one of the human factors that affect project completion, 20% lack of planning, 19% lack of coordination between client and project team, 17% unclear project tasks and objectives, 4% poor project estimation.



objectives, 15% lack of communication while 4% of the respondents responded that project completion fails due to poor project estimation

**Figure 8: Percentage distribution if the company values project management skill**

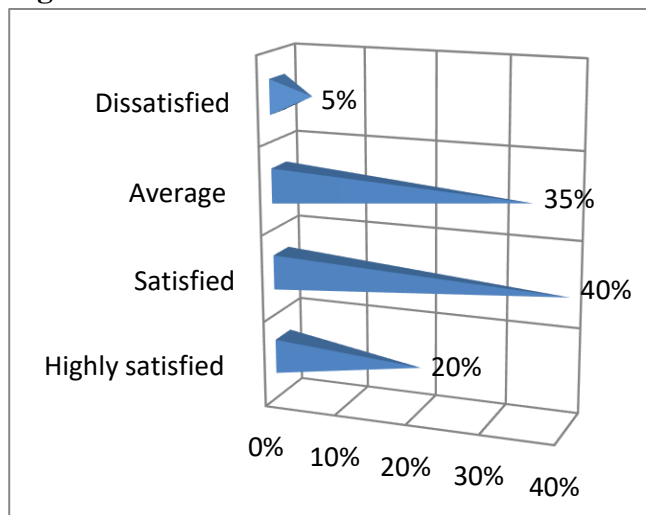


Source: Authors' own compilation

According to figure 8, the majority of the respondents such as 80% agreed that the company values project management while 20% disagreed

To access the effects of project failure

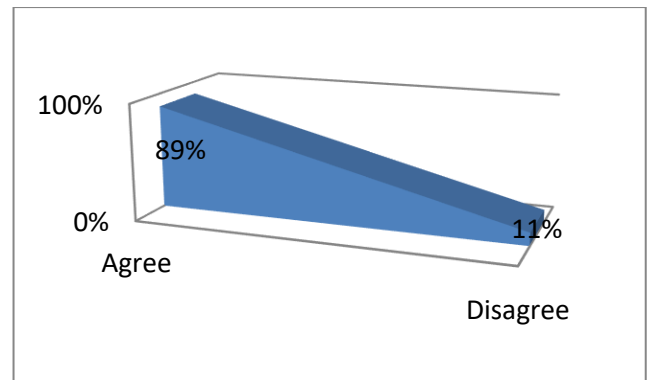
**Figure 9: Percentage distribution of the level of satisfaction with the working culture of the organization**



Source: Authors' own compilation

According to figure 9, the majority of the respondents such as 40% responded that they are satisfied with the working culture, 35% responded that the working culture is average, 20% were highly satisfied while 5% were dissatisfied.

**Figure 10: Percentage distribution if there are any effects of project failure**



Source: Authors' own compilation

According to 10, the majority of the respondents such as 89% agreed that are effects of project failure while 11% disagreed.

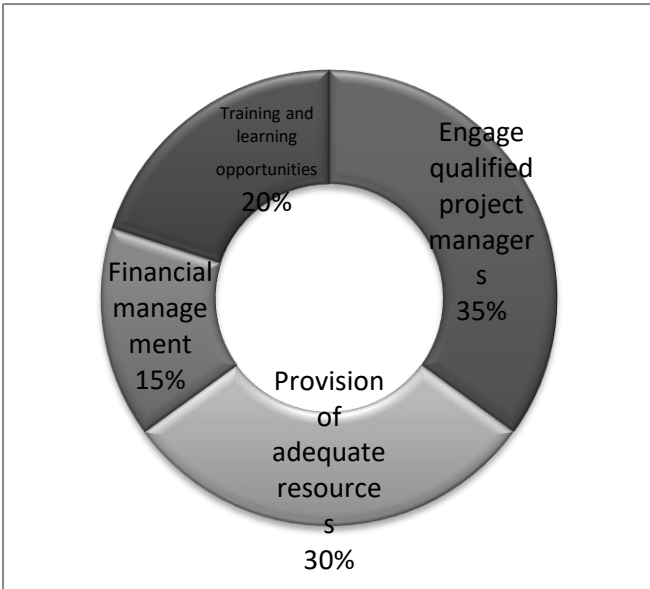
**Table 2: Percentage distribution of some of the effects of project failure**

Effect of project failure	response
Loss of revenue	25%
Loss of trust in contractors	15%
Substandard projects	35%
Loss of employment by many casual workers	5%
Imprisonment of contractors	20%

Source: Authors' own compilation

According to table 2, the majority of the respondents such as 35% responded that one of the effects of project failure is substandard projects, 25% loss of revenue, 20% imprisonment of contractors, 15% loss of trust in contractors while 5% loss of employment by many casual workers.

**Figure 11: Percentage distribution of what construction professionals think should be done to improve their workplace**

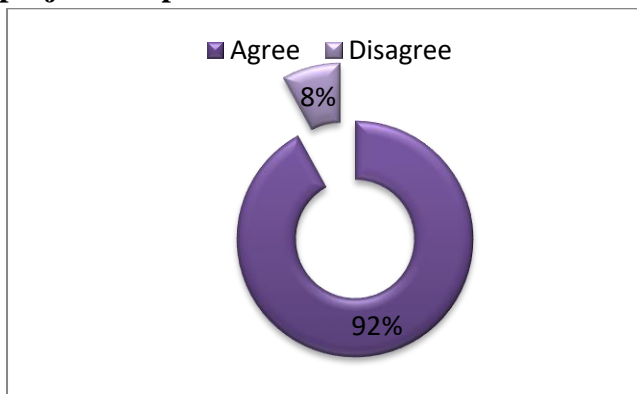


Source: Authors' own compilation

According to figure 11, the majority of the respondents such as 35% responded that in order to improve their work place qualified project managers should be engaged, 30% responded that adequate resources should be provided, 20% responded that there should be training and learning opportunities while 15% responded that financial management

To ascertain the measures that can be put in place to ensure effective project completion among contractors in Zambia

**Figure 12: percentage distribution if there any measures that can be put in place to ensure project completion**



Source: Authors' own compilation

According to figure 12, the majority of the respondents such as 92% agreed that there are measures that can be put in order to ensure project completion while 8% disagreed.

**Table 3: Percentage distribution the measure that can be put in place in order to improve performance and completion of construction projects**

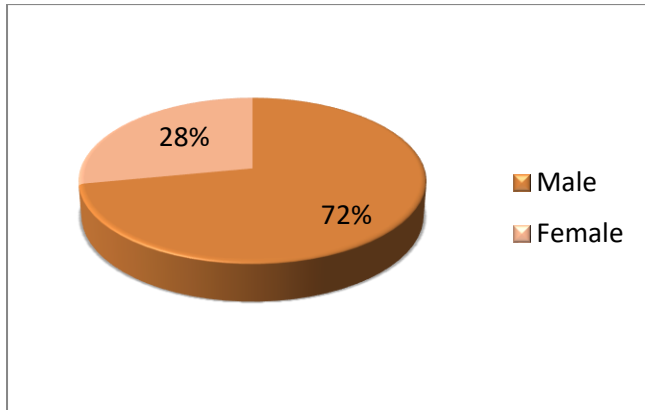
Measure that can be put in place	Response
Improving site management and supervision	10%
Having clear information and communication channels	5%
Ensuring effective strategic planning	20%
Adhering to construction drawings and specifications	5%
Employing qualified and experienced workers	25%
Adequate planning	20%
Minimizing disputes between all parties	15%

Source: Authors' own compilation

According to table 3, the majority of the respondents such as 25% responded that measures that can be put in place in order to improve project completion include employing qualified and experienced workers, 20% ensuring effective strategic planning, 20% adequate planning, 15% minimizing disputes between all parties, 10% improving site management and supervision, 5% having clear information and communication channels while the other 5% responded that adhering to construction drawings and specifications.

## General information for Clients

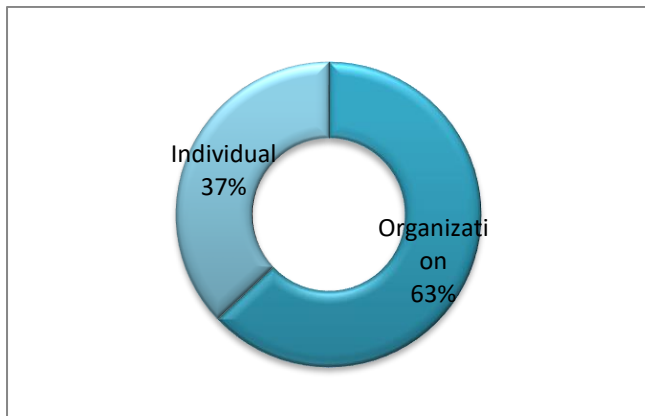
**Figure 13: Percentage distribution of Sex of respondent**



Source: Authors' own compilation

According to figure 13, the majority of the respondents such as 72% were male while 28% were female.

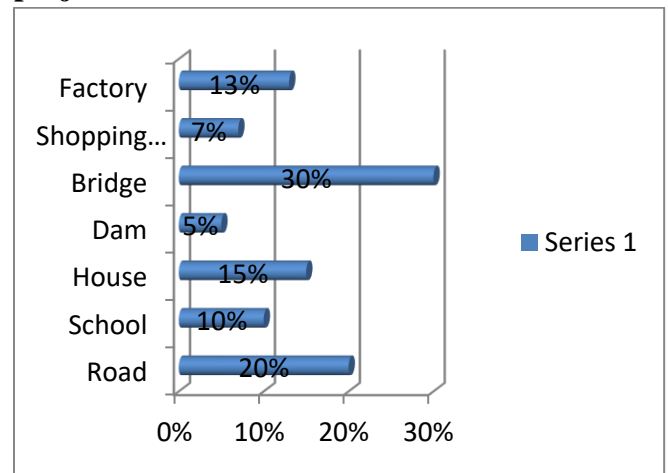
**Figure 14: Percentage distribution of Organization/individual**



Source: Authors' own compilation

According to figure 14, the majority of the respondents such as 63% were organizations while 37% were individuals.

**Figure 15: Percentage distribution of what project has been constructed for clients.**

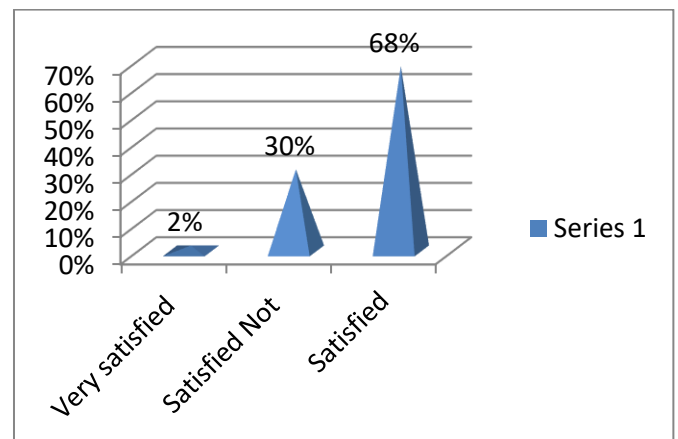


Source: Authors' own compilation

According to figure 15, the majority of the respondents such as responded that a bridge was constructed for them, 20% road, 15% house, 13% factory, 10% school, 7% shopping complex while 5% a dam was constructed for them.

To establish human factors affecting project completion among contractors in Zambia.

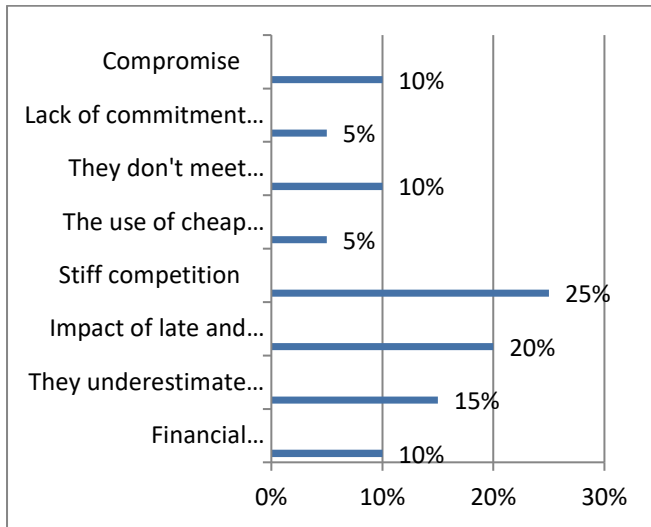
**Figure 16: Percentage distribution of the overall how satisfaction of the service provided by the contractor**



Source: Authors' own compilation

According to figure 16, the majority of the respondents such as 68% were satisfied with the service provided by the contractor, 30% were not satisfied while 2% were very satisfied.

**Figure 17: Percentage distribution of some of the factors that affect project completion**



Source: Authors' own compilation

According to figure 17, the majority of the respondents such as 25% responded that among the factors that affect project completion there is stiff competition, 20% impact of late and over-budget milestones, 15% they underestimate their quotations, 10% compromise, 10% they don't meet quality standards required by clients, 10% financial Mismanagement, 5% lack of commitment Inadequate knowledge of project deliverables while the other 5% responded that contractors use of cheap incompetent man power.

To access the effects of project failure

**Table 4: Percentage distribution of some of the effects of project failure according to the clients understanding**

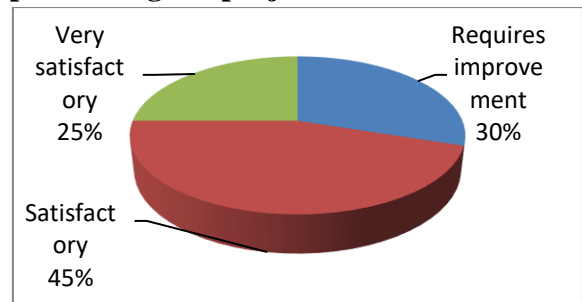
Effect of project failure	response
Loss of revenue	30%
Loss of trust in contractors	5%
Substandard projects	40%
Loss of employment by many casual workers	10%
Imprisonment of contractors	15%

Source: Authors' own compilation

In table 4, the majority of the respondents such 40% responded that among the effects of project failure there is substandard projects, 30% loss of revenue, 15% imprisonment of contractors, 10% loss of employment by many casual workers, while 5% loss of trust in contractors.

To ascertain the measures that can be put in place to ensure effective project completion among contractors in Zambia

**Figure 18: Percentage distribution of how clients describe the professionalism of the service provided by Zambian contractors in implementing the project**



Source: Authors' own compilation

According to figure 18, the majority of the respondents such as 45% responded that the professionalism of the services provided by the Zambian contractors is satisfactory, 30% responded that it requires improvements while 25% responded that it is very satisfactory.

**Table 5: Percentage distribution of the measure can be put in place in order to improve performance and completion of construction projects from the clients' point of view**

Measure that can be put in place	Response
Improving site management and supervision	30%
Having clear information and communication channels	15%
Ensuring effective strategic planning	20%
Employing qualified and experienced workers	25%
Minimizing disputes between all parties	10%

Source: Authors' own compilation

According to table 5, the majority of the respondents such as 30% responded that among the measures that can be put in place in order to improve performance and completion of construction project site management and supervision should be improved, 20% responded that employing qualified and experienced workers, 20% responded that ensuring effective strategic planning, 15% responded that having clear information and communication channels while 10% of the respondents responded that minimizing disputes between all parties.

## 7) Discussion of findings

Construction costs will increase because of ineffective contract management. The most significant factor affecting the cost performance of a project was determined to be the project participants' coordination. Substandard projects, lost revenue, contractor imprisonment, contractor distrust and the loss of employment for many casual workers are all consequences of project failure. Zambia's economic slowdown is due to a lack of capacity and substandard infrastructure in the public sector. Hiring qualified and experienced workers, ensuring effective and adequate strategic planning in advance, and improving site management and supervision are all effective ways to ensure successful project completion.

## 8) Conclusion

The purpose of this study was to determine the human factors performance in Zambia as a prerequisite for completing a project there. Findings show that human factors have a significant impact on project completion and can have serious consequences for the contractor,

country, citizens, and the project's owner. The importance of the project management team must be recognized to ensure a higher success rate. Engineers who are adept at dealing with failure literacy are cognizant of all possible pitfalls that may arise. Failure literacy can be used to make future projects safer and more conscientious, avoiding the same problems.

## 9) Acknowledgement

This achievement would not have been possible without the assistance of those close to me, but most importantly, I want to express my gratitude to GOD, who has inspired me in everything I've done. I'm speechless at how appreciative I am for all the blessings, love, and support I've received thus far (Psalm 46:1). A special thanks to all my family members for their unwavering support of my graduate studies in project management, from the start to the conclusion of this thesis. Encouragement from my friends means a great deal to me as well. Their criticism, guidance, and encouragement were instrumental in propelling me to this point. I am proud today because they have stood by me.

Copperbelt University also inspired me greatly in my work. My lecturers have been extremely supportive and willing to go the extra mile for me when it comes to pursuing my thirst for knowledge. They have positively influenced my thinking through their well-reasoned positions on a variety of issues.

I'd like to express my gratitude to my supervisor Mushtaq Malik for his unwavering support and guidance throughout this study, as well as his enthusiasm and availability whenever I required it.

## REFERENCES

- [1] Adam, O. (1997) Contractor Development in Nigeria: Perceptions of Contractor and Professionals. *Construction Management and Economics*, 15 95-108
- [2] Ahonen, J. J. & Savolainen, P. (2010) Software Engineering Projects May Fail Before They Are Started: Post-Mortem Analysis of Five Cancelled Projects. *Journal Of Systems and Software*, Vol. 83, No.11; pp.2175–2187
- [3] Ahonen, J., and Savolainen, P., (2010). Software Engineering Projects May Fail Before They Are Started: Post-Mortem Analysis of Five Cancelled Projects. *Journal Of Systems and Software*, 83 (11), 2175-2187.
- [4] Amade, B. (2014). *Containing Failure and Abandonment of Public Sector Construction Projects in Nigeria*. A Seminar Paper of The Department of Project Management Technology, For A Ph.D. of The Federal University of Technology, Owerri, Nigeria, December 2014. Pp 1-35.
- [5] Ayal, M., (2005) *Effect of Scope Changes on Project Duration Extensions*. Tel Aviv: Tel Aviv University.
- [6] Belassi, W., And Tukel, O. I. (1996) “A New Framework for Determining Critical Success/Failure Factors in Projects.” *International Journal of Project. Management.*, 14(3) 141–151.
- [7] Belout, A. (1998) “Effects of Human Resource Management on Project Effectiveness and Success: Toward A New Conceptual Framework.” *International Journal of Project. Management.*, 16 (1) 21–26.
- [8] Bourne, L. (2008) Project Relationship Management and The Stakeholder Circle. *International Journal of Managing Projects in Business*, Vol.1, No.; Pp.125-130
- [9] Chai, S.C., Yusof A.M. (2013) Reclassifying Housing Delivery Delay Classification. *International Journal of Business Management*, Vol. 8, No. 22, Pp. 107-117.
- [10] Chan, D. W. M., And Kumaraswamy, M. M. (1997) “A Comparative Study of Causes of Time Overruns in Hong Kong Construction Projects.” *International Journal of Project. Management.*, 15(1), 55–63.
- [11] Chism, N., Armstrong, G. (2010, September). *Project Delivery Strategy: Getting It Right*. KPMG International, Pp.1-24.
- [12] Chua, D. K. H., Kog, Y. C., And Loh, P. K. (1999). “Critical Success Factors for Different Project Objectives.” *J. Constr. Eng. Manage.*, 125(3), 142–150.
- [13] Damoah, I., 2015. *An Investigation into The Causes and Effects of Project Failure in Government Projects in Developing Countries: Ghana as A Case Study* (Doctoral Dissertation, Liverpool John Moores University).
- [14] Dim, N., 2018, November 7. Project Failure in The Nigerian Construction Industry: Cases of Highway Construction Projects by The Nigerian Ministry of Works.
- [15] Dissanayaka, S. M., And Kumaraswamy, M. M. (1999). “Evaluation Of Factors Affecting Time and Cost Performance in Hong Kong Building Projects.” *Eng., Constr. Archit. Manage.*, 6(3), 287–298.
- [16] Dosumu, O., And Aigbavboa, C., 2017. *Impact Of Design Errors on Variation Cost of Selected Building Project in Nigeria*. *Procedia Engineering*, 196, 847-856.
- [17] Edmonds, G. And Miles, D. (1984) *Foundation of Change, Aspects of The Construction Industry in Developing Countries*, London: Intermediate Technology Publication Ltd.
- [18] Eneh, O. (2011). Failed Development Vision, Political Leadership, And Nigeria’s Underdevelopment: A Critique. *Asian Journal of Rural Development*, 1 (1), 63 69.
- [19] Fapohunda, J.A, Stephenson, P. (2010). Optimal Construction Resources Utilization: Reflections of Site Managers’ Attributes. *Pacific Journal of Science and Technology*. Vol. 11, NO. 2, Pp. 353-365.
- [20] Gyimah-Boadi, E., 2002. *Confronting Corruption in Ghana and Africa, Briefing Paper: Ghana Centre for Democratic Development (CDD-Ghana)*. 4 (2), 1-6.
- [21] Hassan, A. Q. (1995). “Don’t Burn That Bridge.” *J. Manage. Eng.*, 11(6), 22.

- [22] Hoang, H., And Rothaermel, F., 2005. The Effect of General and Partner-Specific Alliance Experience on Joint R&D Project Performance. *Academy Of Management Journal*, 48 (2), 332-345.
- [23] Hubbard, D. G. (1990). "Successful Utility Project Management from Lessons Learned." *Project. Management. Journal.*, 21~31, 19-23.
- [24] Hussien, M. E., (2018) *Causes and Impacts of Poor Communication in The Construction Industry.*
- [25] Ikechukwu, A., Fidelis, I., And Celestine, O., 2017. Effective Communication as A Panacea for Conflict Avoidance in Public Building Construction Project Delivery. *International Journal of Advanced Research in Engineering and Management*, 3 (3), 38-53.
- [26] International Labour Organization, (1987) *Guidelines for The Development of Small-Scale Construction Enterprises*, Geneva: International Labor Office.
- [27] Jannadi, O.M. (1997) Reasons for Construction Business Failures in Saudi Arabia. *Project Management Journal*, 28(2) Jun 32-6. 20
- [28] Kaliba, C., Muya, M. & Mumba, K. (2009) Cost Escalation and Schedule Delays in Road Construction Projects in Zambia. *International Journal of Project Management*, Vol.27, No.5; Pp. 522-531
- [29] Lewis, T, M. (1984) *A Review of The Causes of Recent Problems in The Construction Industry of Trinidad and Tobago.* *Construction Management and Economics*, 2 37-48.
- [30] Liu, J. Y., Chen, H., Chen, C. C. & Sheu, T. S. (2011) Relationships Among Interpersonal Conflict, Requirements Uncertainty, And Software Project Performance, *International Journal of Project Management*, Vol.29, No.5; Pp.547-556
- [31] Long, N. D., Ogunlana, S., Quang, T. And Lam, K. C. (2004). Large Construction Projects in Developing Countries: A Case Study from Vietnam, *International Journal of Project Management*, Vol. 22, PP. 553-561.
- [32] Miles, D. (1979) *Financial Planning for The Small Building Contractor*, London: Intermediate Technology Publication.
- [33] Miles, D. (1980), *The Small Building Contractor and The Client*, London: Intermediate Technology Publication.
- [34] Mirza, M., Pourzolfaghar, Z., And Shahnazari, M., 2013. Significance Of Scope in Project Success. *Procedia Technology*, 9, 722- 729.
- [35] Navon, R. (2005). Automated Project Performance Control of Construction Projects, *Automation in Construction*, Vol. 14, PP. 467-476.
- [36] Nweze, N., (2016). Failure Of Public Infrastructure Projects in Nigeria: Causes, Effects, And Solutions. *Textile International Journal of Management*, 2 (2), 1-20.
- [37] Nweze, N., (2016). Failure Of Public Infrastructure Projects in Nigeria: Causes, Effects and Solutions. *Textile International Journal of Management*, 2 (2), 1-20.
- [38] Nzekwe, J., Oladejo, E., And Emoh, F., (2015) Project Failure as A Reoccurring Issue in Developing Countries: Focus on Anambra State, Southeast, Nigeria. *International Journal of Energy and Environmental Research*, 3 (3), 1-20.
- [39] Odeh, A. M. And Battaineh, H. T. (2002) Causes of Construction Delay: Traditional Contracts. *International Journal of Project Management*, 2002, 20, Pp. 67-73.
- [40] Odenyika, H. A. & Yusif, A. (1997) The Causes and Effects of Construction Delays on Completion Cost of Housing Projects in Nigeria. *Journal Of Financial Management of Property and Construction*, Vol.2, No.3; Pp.31-44
- [41] Ofori, G. (1991) Programmes for Improving the Performance of The Contracting Firms in Developing Countries: A Review of Approaches and Appropriate Options. *Construction Management and Economics*, 9 19-38.
- [42] Ogundelea, O., And Somefunb, O., 2008. SDI: Prospects and Challenges for Federal State Developing Countries (Case of Nigeria). *The International Archives of The Photogrammetry, Remote Sensing and Spatial Information Sciences*, XXXVII, 31-37.

- [43] Okuntade, T., (2015) Shortage of Skills Workers in The Nigerian Construction Industry: A Paradigm of a Failed Government Policy.
- [44] Okwandu, G., (2010) *Construction Project Management in Nigeria: Challenges and The Way Forward*.
- [45] Oladipo A. A. (2007). A Quantitative Assessment of The Cost and Time Impact of Variation Orders on Construction Projects. *Journal Of Engineering, Design and Technology*. 5 (1): 35-48.
- [46] Olapade, O. And Anthony, O. (2012). Abandonment Of Building Projects in Nigeria- A Review of Causes and Solutions.
- [47] OLATUNJI, A. A. (2010). Influences On Construction Project Delivery Time. (Ph.D. Thesis). Nelson Mandela Metropolitan University, Eastern Cape, South Africa.
- [48] Onyekpere, E. (2011). Public Procurement Report 2011. A Publication of The Centre for Social Justice Ltd by Guarantee, Abuja. Pg 1-64. ISBN:978-978-932-000-4, www.Csj-Ng. Org
- [49] Oyedele, L. (2013) Avoiding Performance Failure Payment Deductions In PFI/PPP Projects: Model of Critical Success Factors. *Journal Of Performance of Constructed Facilities*, 27 (3). Pp. 283-294.
- [50] Pinto, J. F. (2013) Lies, Damned Lies, And Project Plans: Recurring Human Errors That Can Ruin the Project Planning Process. *Business Horizons*, Vol.56, No.5; Pp.643-653
- [51] Pourrostam, T. & Ismail, A. (2011) Significant Factors Causing and Effects of Delay in Iranian Construction Projects. *Australian Journal of Basic and Applied Sciences*, Vol.5, No.7; Pp.45-450
- [52] Pourrostam, T., And Ismail, A., (2011) Significant Factors Causing and Effects of Delay in Iranian Construction Projects. *Australian Journal of Basic and Applied Sciences*, 5 (7), 45-450.
- [53] Ruddock, L. (1992) *Economics for Construction and Property*. London: Hodder and Stoughton.
- [54] Ruuskaa, I. & Teigland, R. (2009) Ensuring Project Success Through Collective Competence and Creative Conflict in Public-Private Partnerships – A Case Study of Bygga Villa, A Swedish Triple Helix E-Government Initiative. *International Journal of Project Management*, Vol.27, No.4; Pp.323-334
- [55] Stretton, A. (1984) The Building Industry in Papua New Guinea, Papua New Guinea: Institute of Applied Social and Economic Research.
- [56] Sudhakar, G., (2016) Critical Failure Factors (Cffs) Of IT Projects. *International Journal of Management Research*, 4 (2).
- [57] Taherdoost, H., And Keshavarzsalehc, A., 2016. Critical Factors That Lead to Projects' Success/Failure in Global Marketplace. *Procedia Technology*, 22, 1066-1075.
- [58] Tait, M., And Callick, R. (1993) *The Papua New Guinea Handbook*, Canberra: National Library of Australia.
- [59] Tell., (2008), *Tell. Ikeja*, Nigeria: Tell Communications Ltd.
- [60] Toor, S. U. R. And Ogunlana, S. O. (2008). Critical Coms of Success in Large-Scale Construction Projects: Evidence from Thailand Construction Industry. *International Journal of Project Management*, 26, 420-430
- Critical Coms of Success in Large-Scale Construction Projects: Evidence from Thailand Construction Industry. *International Journal of Project Management*, 26, 420-430