Impact of Emotional Intelligence of Project Management Professionals on Success of Construction Projects in Lusaka District

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ABSTRACT

The construction industry in Zambia has not been very efficient and effective in project delivery. Often projects are either delivered behind schedule and in most cases encounter cost slippage. Researchers have since noted that among many other factors the implementation challenges that have continued to hamper the performance of construction projects are because of an existence imbalance where soft skills are given less priority in favor of technical skills. In view of this, there is a growing prognosis by several researchers that tend to associate project success to emotionally intelligent individuals in the construction industry as well. This therefore framed the purpose of the study which was to investigate the impact of emotional intelligence of project management professionals on the success of the L400 road projects in Lusaka District. The objectives of the study were: to assess the level of emotional intelligence of project management professionals involved in the L400 road project in Lusaka District, to assess the project success level of the L400 road project in Lusaka District and to examine the relationship between the emotional intelligence of project management professionals and the success of the L400 road project in Lusaka District.

The study was cross-sectional and used a quantitative approach which also included hypothesis testing. The study target population of 97 consisted of project managers, contractors (included subcontractors), and consultants from which a sample of 78 was drawn. The study used a five-point scale questionnaire as the main instrument of data collection. The study obtained a Cronbach's Alpha Coefficient of 0.759 for emotional intelligence and project success 0.891 which shows that the instruments were reliable. Quantitative data was analyzed using descriptive and inferential statistics and data was presented in frequency tables, pie charts and bar graphs. The direct Hypothesis was tested using liner regression at 0.05 level of significance to determine the degree and direction of the relationship between emotional intelligence (independent variable) and project success (the dependent variable) variables.

Pearson product correlation results revealed that the relationship was positive, moderate in strength and statistically significant (r=.463, p <.05). The results also showed that 21.4% (r2 =.214, p < 0.05) in project success was attributed to emotional intelligence. The study recommends the key statutory bodies such as RDA seek training and include emotional intelligence in their core competence requirements for their managers, supervisors, and employees. This study was only conducted in Lusaka district hence future studies are encouraged to cover other provinces and projects to compare the findings.

Keywords: Emotional intelligence, project success, soft skills, and project management professionals.

INTRODUCTION

The need for development in the construction industry is very high. This is because the construction industry contributes significantly to national Gross domestic product (GDP) and exerts an extraordinary influence on economic growth and development of any nation around the world (Mambwe et al 2019). Rhodes, (2015) revealed that "the United Kingdom's (UK) construction industry managed to contribute One hundred and Three billion pounds to the economy in 2014, equivalent to 6.5% of total economic output." Furthermore, it was also revealed that the industry contributed 2.5 million, equivalent to 6.3% of total UK employment. According to the Zambia Development Agency annual report (2017) "construction was Zambia's largest industrial sector, accounting for 27.5% of GDP with a growth rate of 12% in 2016 and attracting US$3.3 billion in foreign direct

investment." In addition, Sichone and Chibomba (2020) revealed that "GDP from construction in Zambia increased from K3,723 million in the second quarter of 2019 to K3,920 million in the third quarter of 2019, an increase of about five percent." This growth has been directly attributed to increased public and private sector investment in infrastructure development.

Investments in the infrastructure of countries, bilateral and multilateral institutions have continued to increase worldwide. Investments in the infrastructure of countries, bilateral and multilateral institutions have continued to increase worldwide. In a study by, Devadas and Penning (2018), it was observed that, "the World Bank Group had prioritized road infrastructure as one of its core areas of support." For example, in 2017 the World Bank disbursed a total of US$66.9 billion for multi-regional and global projects worldwide, with 8% of the funding going to road infrastructure which resulted in a total of 76,120 Kilometers of roads built and renovated, (World bank report, 2018). This significant investment in road infrastructure shows that road infrastructure plays a key role in the economic development of any country and should therefore be prioritized in budgeting and planning, (Mambwe et al., (2017).

The goal of any project is to achieve a specific result within a given timeframe and budget. According to, Kelly et al. (2009), quoted in, Noor and Din (2017), about 30% of the international economy is project-based, which is growing rapidly. But what is interesting and worrying is that the failure rate in projects is often more than the success. To be specific the results of several projects, especially transport infrastructure projects such as roads, are usually unsatisfactory due to their complexity. These complexities are manifold and include delays in completion, cost overruns and failure to meet targets, according to researchers Williams & Samset, (2010). There are many examples of costs over entrenched in mega projects, the cost of the Sochi Olympics was estimated at $12-50 billion, but the actual cost increased by more than 300%, likewise the cost of the London Olympics increased by 101%, Orttung & Zhemukhov, 2014). In Nigeria, the construction project for Abia State Road in Nigeria, started in 2010, was abandoned before it could be completed in 2013 due to cost overruns, (Amade et al., 2015).

Reilly et al., (2017), cited in Noor and Din, (2017), examined in depth the complexities and challenges associated with projects and found that, "the complexities and challenges associated with projects are primarily managerial rather than technical in nature." Mazur, (2014) also provided explicit research which revealed existence of an imbalance in which soft skills have been undervalued in favor of technical skills in construction project management and this has influenced the high failure rates of construction projects, among many other factors.

To determine project success, Jordan and Lindebaum (2015) showed that "project management professionals should possess both project management and leadership skills that are critical to the success of a project." Because, researchers revealed that, when construction project management professionals lacked the required skills, either soft or hard skills, there is a risk of project failure (Maqbool et al.,2017) resulting into waste of time, money, and a decrease in donor funding as well as a loss of government revenue, (Kalivoda,2018). In addition, researchers also noted that a decrease or lack of funding can severely affect the outcome of development projects that are vital to the country's economic growth, (Mambwe et al., 2020). To this end, construction studies have emphasized that it is essential to consider all the necessary factors either soft or technical that could affect the success of a project.

In building our main viewpoint, we found that a soft skill involving emotions (awareness and management) has over the years emerged as a key aspect of how effectively project management professionals go about their day-to-day activities in constructions projects as well (Jordan & Lindebaum, 2018). Emotions, (Mignonac & Herrbach, 2004) according to literature cited in Noor and Din, (2019) are a unique mode of influence felt by everyone in the workplace, not just team members. Researchers, Weiss and Cropanzano (1996) cited in Rezvani et al, (2016), suggested that "the inclusion of negative emotions and moods such as arrogance, eagerness, irritation, embarrassment, guilt, horror, disability, and jealousy affect positive moods in the workplace." If not

managed well, these types of emotions can eventually affect the various types of project procedures and practices that ultimately impact the success of projects. Positive emotions and moods, on the other hand, encourage creativity, integrative thinking, and inductive reasoning, while negative moods drive more attention to errors and problems, embarrassments, demotivation and overly conflicts and failure to solve problems amicably. Ultimately, positively changing negative emotions can lead to more flexible planning, engineering of multiple solutions, and a broader view of problems, Ashkanasy & Ashton-James (2005), cited in Noor & Din, (2017).

Human and technical resources according to researchers Ayub, (2019) are both required for each project to be implemented successfully. However human resources are not independent of technical resources. As a result, people are the most important component to the success of a project. As we all know, people have feelings, and those feelings may affect how well a team works together, which in result can affect the success of a project. Although capital and materials play an important role in the success of projects in the construction industry, it is also the influence of construction project management professionals that drives and utilizes all resources to achieve project success, (Khan et al., 2021). When it comes to achieving desirable project outcomes, emotions are also an important factor to consider (Noor & Din, 2017b). For example, people from different countries, regions, ethnicities, religions, and professional backgrounds come together to work together to complete the project (Ghafur et al., 2019). However, the diversity of individuals working in a construction project gives rise to issues such as disparity in traits and behaviors, differing goals, and often conflicting interests. Consequently, such challenges place significant demands on the ability of construction professionals and managers to manage their own emotions and those of the diverse stakeholders to achieve effective project execution (Rezvani et al., 2020).

Project management in construction projects involves the formation of a collaborative team consisting of the client, consultants, contractors, engineers, designers, surveyors, laborers, project managers, etc., all working together over a relatively long period of time. (Mo et al. 2019). Therefore, in such a personnel-intensive environment, personnel management and corresponding soft skills or abilities are essential for the successful implementation of construction projects. A study by Ayamed (2017) revealed that an effective project management professional as an individual must have extreme communication skills, high interpersonal skills, managerial skills as well as technical know-how. Thus, to become a project management professional in the construction industry, one must also learn other soft skill such as those involving psychology, human behavior, organizational functioning, interpersonal interactions, and communication effectiveness (Kerzner, 2013). Accordingly, emotional intelligence has in the past years emerged as a crucial soft skill, recognized by a growing number of researchers as a critical factor in project delivery, especially in a labor-intensive industry like construction.

Emotional intelligence according to Goleman (1998) quoted in Maqbool et al. (2017) was defined as the ability to arrange one's own feelings and those of others to motivate ourselves and regulate emotions in ourselves and our relationships with others as emotional intelligence. Goleman (1998b) further described four main behavioral clusters of emotional intelligence, namely: self-awareness, social awareness, self-management, and relationship management. A person who was considered emotionally intelligent exhibited these four dimensions in proportional amounts.

Prior to Goleman's (1998) books on emotional intelligence, people's awareness of the importance of emotional intelligence has grown in decades, including in the construction industry. Thus, there is a growing body of researchers who tend to associate project success with emotionally intelligent project management professionals. Results from several studies have shown a persistent link between emotional intelligence and the success of construction projects. A study by Montenegro et al. (2021) showed that a person's ability to manage conflicts among themselves and with their peers, as well as with other team members, is said to improve if they are emotionally intelligent. Similarly, studies by Rezvani et al. (2020) demonstrated that emotional intelligence is

not only an augar of project success, but also an important predictor of both physical and mental outcomes for project management professionals. Researchers Ghafur et al. (2019) revealed that emotional intelligence is an individual ability; It is also a team skill to motivate and create an energizing force that can help the project team identify and avoid signs of project failure. Pryke et al. (2015) further added that to build a successful team, management should employ project managers who consider the emotional competencies of their team members and foster an environment that encourages the exchange of ideas through good interpersonal interactions, indicating a need for soft skills training.

Large construction projects are always faced with challenges and complexities in the work environment, which have a major impact on employee performance and project success. Studies have shown that emotional intelligence is an important soft skill to overcome project complexity and complete the project successfully. Findings in a study by Rezvani et al. (2016) revealed that complexity is always increasing in new projects and emotionally intelligent project managers can handle the complexity and make the project successful. Their results further indicated that top management should be aware of the importance of highly emotionally intelligent project managers and their contribution to project success. If top management wants to keep their project from complexity and complete the project successfully, they should hire emotionally intelligent project managers.

Ayub (2019) further revealed that emotionally intelligent project managers can handle the negative emotions and stress of team members. This is because emotional intelligence helps managers to be aware of the negative emotions of team members and that awareness helps them to improve communication among the team members so that they can express their negative emotions with them to help communicate with team members quickly and easily. And emotional expression further leads the project managers towards creating team cohesion which leads towards project success (Stephens & Carmeli (2016).

The construction industry in developing countries continues to face several implementation challenges, which has led to several failed projects. Reports from Ghana showed that between 2009 and 2011 over US$100 million was lost due to poor project implementation (Alagidede et al., 2013). In Nigeria, the construction project for Abia State Road in Nigeria, started in 2010, was abandoned before it could be completed in 2013 due to cost overruns (Amade et al., 2015). Similarly in Zambia, US$118.7 million was spent on road projects in 2005, while US$227 million was spent in 2006, as well as US$197 million in 2007, (Kaliba et al., 2008) and US$340 million in 2012 (RDA,2016), however many of these projects could not be completed on time and within budget due to multiple implementation challenges, resulting in lost revenue due to cost overruns and schedule shifts, (Chilongo and Mbetwa, 2017). A study by, Mambwe et al. (2017) found that developing countries have encountered several project challenges especially at implementation phase and these are primarily related to how well construction professionals utilized soft skills, and not just technical skills. Furthermore, Sichone and Chibomba (2019) found that if either soft skills or technical skills are ignored, there is a risk of project failure, which has serious implications.

The importance of emotional intelligence continues to be explicitly researched in the construction industry, especially in developed countries. However, Ayub, (2019) pointed out that generalizability may be limited as several studies conducted have been conducted in a Western context. Despite the paucity of literature on the subject in developing countries, some studies have also provided insights. In South Africa, Oke et al. (2017) conducted a study on the "benefits of emotional intelligence in the construction industry in South Africa," and the study found that emotional intelligence was not only key to the overall improvement of the project but also to improved communication between the clients and the entire team.

While there is little indigenous research information in Zambia to directly link emotional intelligence to construction projects, few scholars have provided insight into this aspect and the findings have since highlighted the importance of soft skills in the success of construction projects, particularly in the implementation phase. Findings from a study conducted by, Chilongo and Mbetwa (2017), revealed that, "project success was

hampered by factors such as poor management and leadership; poor relationships and coordination of stakeholders; lack of motivation, overdrive, and cultural issues." In another study by Mambwe et al. (2020) it was observed that project management soft skills such as stakeholder engagement had an impact on the performance of L400 road construction projects in Lusaka District, among many other factors. This study therefore sought to investigate the impact of emotional intelligence of project management professionals on success of the L400 road construction project in Lusaka District.

II. METHOD

The research methodology employed was quantitative, with descriptive research design in which a questionnaire survey was adopted. A similar research method was applied in Mambwe et al (2019) study which looked at the impact of stakeholder engagement on performance of construction projects in Lusaka district, Zambia.

A. Participants

The sample of this study was selected using a combination of stratified random sampling, and simple random sampling. Stratified random sampling technique was employed to determine both the sample size and respondents who were a representation of the entire population. Kombo and Tromp (2013) define stratified sampling as involving segmenting a population into subgroups that are homogenous in nature through the selection of a simple random sample from each group.

The population target of the study focused on construction firms directly involved in the construction of roads under Phase Three of the Lusaka (L400) roads project in Lusaka District for the past eight (8) years. Suffice to mention that all construction firms involved were registered with National Construction Council (NCC). Additionally, the population also included contractors (54), Project Managers (40) and Consultants (3) indicating a total of 97. To calculate the sample size, the Slovens's Formula was adopted:

Equation 1 : $n = N / [1 + N (e)^2]$

Where n =Sample size, N =Population size, e = Margin of error. Thus, N = 97; e = 5% with 95% confidence level, giving a sample size of 78 respondents. The sampling proportions attained 80%. This gave a sampling size of Contractors (43), project managers (33) and consultants (2). From among the participants, 57 were males and 13 were female (figure 1), who were at least 18 years old (mean = 3.1; SD=1.144). Demographical data pertaining to various characteristics of the sample of this study is indicated in Table 1.
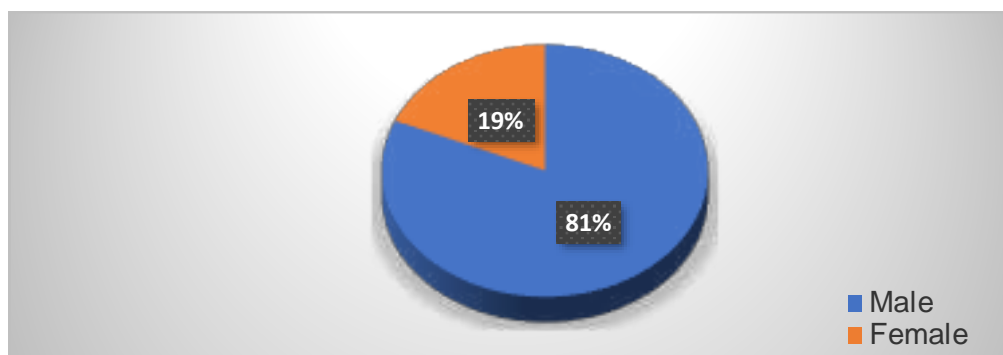

Figure 1. Gender in percentage (Total respondents =70)

Table 1 Demographical characteristics of the sample of the study

Characteristic	Category	Frequency	Percent
Age	18 - 25 years	4	5.7
	26 - 33 years	20	28.6
	34 - 41 years	21	30.0
	42 - 49 years	15	21.4
	50 and above1	10	14.3
Academic Qualifications	Certificate	13	18.6
	Diploma	14	20.0
	Bachelor's Degree	14	20.0
	Master's degree	20	28.6
	Doctoral Degree	9	12.9
Position	Project Manager	33	47.1
	Contractor/Supplier	36	51.4
	Consultant	1	1.4
Work Experience in Construction Sector	0 - 5 years	31	44.3
	6 - 10 years	16	22.9
	11 - 15 years	11	15.7
	16 - 20 years	4	5.7
	21 - 25 years	8	11.4

Firm Ownership

Figure 2 shows that 36% of the respondents were from foreign firms, 31 % of the respondents were from local firms, 29% were from partnership firms and only 4% were from the government agency. Thus, most of the respondents were from foreign firms.
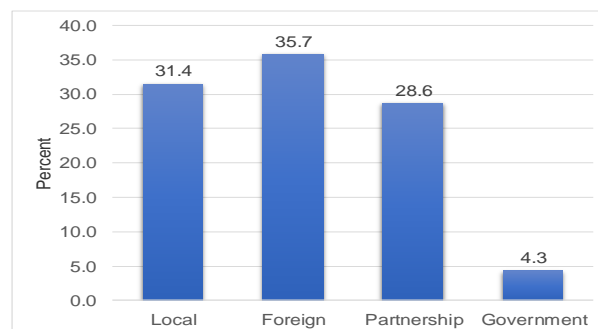
Figure 2 Distribution of Respondents by Firm Ownership

B. Research Instruments

Two variables were included in the study. The independent variable included emotional intelligence with project success as the dependent variable. Data was collected using two separate self-administered questionnaires each consisting of four factors, and each was measured using five items on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to enable respondents provide the appropriate answers to the questions raised.

    i.   Measure of Emotional Intelligence

For emotional intelligence, scales were adopted from the Goleman Emotional Competency Model (Goleman, 1998) also adopted in Maqbool et al (2017). Emotional intelligence has four dimensions; namely, (1) self-awareness, (2) self-management, (3) social awareness, and (4) relationship management. These were measured through 20 items on a five-point Likert Scale, which ranged from strongly disagree (1) to strongly agree (5). The net score of the items reflected the scores for the dimensions. Maqbool et al (2017) recorded alpha coefficients between .81 and .93 for each of the four factors. In this research alpha coefficients were .78 for the overall scale, .74 for self-awareness, .70 for self-management, .78 for social awareness and .70 for relationship management.

    ii.   Measures of Project Success

As the research examined project management professionals' ratings of project success it was important to employ a scale that enabled the participants to make as objective an evaluation of project success of the L400 road project in Lusaka district of Zambia as possible. To achieve this the dependent variable was measured using Pinto's (1990) 50-item project implementation profile (PIP) scale. Pinto based the scale on ten factors earlier identified by Pinto and Slevin (1989) as critical to the successful implementation of a project. Using this scale participants evaluate both hard and soft factors in a quasi-objective fashion. The scale is designed to assess project implementation performance generalized across different types of projects and organizations, and to minimize opportunities to give inflated scores (Pinto, 1990; Pinto & Mantel, 1990).

The PIP was used to assess participants' perceptions of the L400 road project in Lusaka district against four of the ten factors identified by Pinto and Slevin (1989): project mission, top management support, communication and trouble-shooting. Each factor was measured using five items. The items were rated on a Likert scale from 1 (strongly disagree) to 5 (strongly agree). Pinto (1990) recorded alpha coefficients between .79 and .90 for each of the ten factors. In this research alpha coefficients were .89 for the overall scale, .84 for project mission, .81 for top management support, .81 for communication and .84 for trouble-shooting.

C. Data Analysis and Results

Both descriptive and inferential statistics were used to analyze the data, with the help of Statistical Package for Social Sciences (SPSS) version 21.0. Specifically descriptive statistics were used to analyze emotional intelligence and project success net scores through mean comparison. In terms of inferential statistics, a Pearson correlation analysis was performed to measure the strength and direction of the linear relationship between emotional

intelligence (independent variable) and project success (dependent variable). The results in table 4.9, shows that emotional intelligence has a positive and moderate relationship with project success ($r = .463$, $p < .001$), which implies that with the increase of emotional intelligence the project success will also increase (see table 1). Thereafter the study applied a simple linear regression model to check the direct hypothesis of the study. Thus, dependent variable project success (PS) was regressed on predicting variable emotional intelligence (EI) to evaluate hypothesis H1. The results of data analysis for the hypothesis in Table 4.10 show that 21.4% variation ($R^2=.214$, $F_{(1,68)} =18.535$, $p <.01$) in project success is being predicted by emotional intelligence. The

Coefficient (B =.463, p< .001) shows that with one-unit change in emotional intelligence 0.463 positive units will change in project success. The results in t=7.348, p < .01 support the hypothesis that emotional intelligence has a positive impact on the project success of the L400 road project in the Lusaka district (see table 2).

Table 2. Emotional intelligence mean Scores of project management professionals involved on the L400 road project in Lusaka District

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Valid N (listwise)	70				
Emotional Intelligence	70	3.05	4.25	3.5764	.29374

Table 3. Respondents mean score ratings of project success involving the L400 road project in Lusaka district

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Valid N (listwise)	70				
Project Success	70	3.35	4.55	4.0264	.26344

Table 4. Pearson Correlation Analysis

		EI	PS
Emotional Intelligence (EI)	Pearson Correlation	1	.463[**]
	Sig. (2-tailed)		.000
	N	70	70
Project Success (PS)	Pearson Correlation	.463[**]	1
	Sig. (2-tailed)	.000	
	N	70	70

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

Table 4. Regression analysis.

Model	Regression Weights		Beta Coefficient	R^2	F	p-Value	Hypothesis Supported
H1	EI	PS	.463	.214	18.535	.000	Yes

III. FINDINGS

Statistically significant relationships were established between emotional intelligence and project success (P<0.05). The Pearson product-moment correlation coefficient (r) value between emotional intelligence and project success variables is 0.463 (r>0.01), which is statistically significant. The relationship was found to be positive, moderate in strength and statistically significant (r=.463, p <.01). Through these findings, it was found that when emotional intelligence of project management professionals increased, success of the L400 road project in Lusaka district of Zambia would also increase. The dependent variable project success was regressed on the predicting variable emotional intelligence to test the hypothesis H1. Findings of this revealed that, emotional intelligence significantly predicted project success F (1,68) = 18.535, p <.001. This showed that emotional intelligence can play a significant role in shaping project success. The Beta coefficient value β=.463 results clearly direct a positive effect of emotional intelligence. Moreover, the R2 = .214 depicts that the model explains 21.4% change or variance in project success. Through these findings, the null hypothesis Ho was rejected while the alternative hypothesis H1 was accepted. The regression results fully supported that emotional intelligence has a positive and direct impact on success of the L400 road project in Lusaka District.

IV. CONCLUSIONS

The purpose of the study was to evaluate the impact of emotional intelligence of project management professionals on project success of roads construction projects in Lusaka District under the L400 roads project. The study concluded that there is a statistically significant and linear relationship between emotional intelligence and project success in roads construction projects under the L400 roads project in Lusaka District, Zambia. Thus, the relationship was found to be positive and moderate in strength. The study also concluded emotional intelligence of project management professionals statistically predicted project success. Thus, emotional intelligence of project management professionals can play a significant role in shaping project success involving the L400 road project in Lusaka District.

The study recommends that emotional intelligence of project management professionals in road construction projects should be enhanced as this would significantly contribute to success of projects in-terms. Thus the study recommends that key statutory bodies such as RDA seek training and include emotional intelligence in their core competence requirements for their project managers, supervisors, and employees. The respondents indicated that emotional intelligence strongly and positively relates to project success such that when one variable increases the other variable also increases. The study also recommends that top management in the construction sector needs to encourage its managers and supervisors to actively seek to develop their emotional intelligence levels as they implement the company strategic objectives.

The study limitation was that the study was set within the district of Lusaka. To have a comprehensive picture of EI and project success in different settings further future studies are encouraged to cover other districts as well other countries to confirm whether the findings are consistent especially in the road construction sector.

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