Critical Success Factors of Large Urban Construction Projects in Djibouti After the Covid-19 Pandemic

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Abstract
Large urban construction projects in Djibouti have been identified as critical drivers of economic growth and development. However, these projects often face challenges in meeting their objectives, which can result in delays, cost overruns, and even project failure. Most past research on this phenomenon was done before the pandemic. For the successful execution of these projects in the post-pandemic era, it is imperative to identify and understand the critical success factors (CSFs) in Djibouti. This research aims to determine the CSFs for large urban construction projects in Djibouti, with a focus on project planning and scheduling, risk management, communication and stakeholder management, contractor competency, and team commitment. This was a quantitative study where the target population was project team members of construction projects in Djibouti. Convenience sampling was used. A survey method was used to collect data from 165 respondents. Data analysis was done using Smart PLS. The findings of this study revealed that contractor competencies and project team commitment are the key determinants of project success in Djibouti. The results of this study will help project owners and project managers prioritize their efforts and allocate resources toward ensuring the selection of the right contractors and improving the commitment of team members. The findings of this study will provide useful insights to project stakeholders and the construction industry as a whole in Djibouti.

Keywords: *Project Planning and Scheduling, Project Risk Management, Project Communication and Stakeholder, Contract Competency, Project Team Commitment, Project Success.*

Introduction
Djibouti, a small state with a population of 1.1 million, is located in the Horn of Africa, according to Djibouti Statistics (2023). Due to its strategic location at the Red Sea gateway, the country is an important centre for local trade and transportation. Djibouti has a heterogeneous ethnic and linguistic composition; official languages include Arabic, French, and Somali. According to the World Bank, the country has recently made remarkable progress in the areas of economic development, infrastructure, and poverty reduction. The government has implemented several reforms to improve the business climate and make it attractive to foreign investment. Djibouti's economy is mainly driven by the service sector, which includes transportation, logistics, and port services, as well as an emerging tourism industry. The GDP growth rate is estimated at 3.6% in

2022, down from 4.8% in the previous year, as reported by the World Bank (2023). The GDP growth rate was estimated at 3.6% in 2022, down from 4.8% the previous year, according to The World Bank (2023). GDP growth is projected to rise even further to 5.3% in 2023.

Kollias & Tzeremes (2019) noted that with more than half of the world's population living in cities and other large towns, issues related to housing, infrastructure, and communication facilities have become increasingly important. In response to this trend, the government of Djibouti has undertaken numerous construction projects to increase and improve the quality of urban infrastructure. However, according to the Urban Development Authority (UDA), many of these projects have faced challenges and some have even failed. A United Nations report (2018) states that many of the urban renewal projects in Djibouti have not been successful because they did not meet the expectations of clients and other stakeholders in terms of budget, schedule, and quality of the project. Failures in urban construction projects can waste many resources and have serious economic, budgetary, and social impacts, according to Kimura and Tsuruta (2014). Despite these negative impacts, it is still unclear what exactly went wrong with urban construction projects in Djibouti. While some scholars claim the main causes are poor project planning, technical deficiencies, and political pressure, others (e.g., Khalifate et al., 2019; Nguyen and Chileshe, 2013) claim the main causes are poor project planning, lack of risk assessment, and inadequate financial planning. However, due to a lack of studies on this phenomenon in Djibouti, such arguments are not yet credible and justifiable there. The objective of this study is to identify the reasons and factors for the failure of urban development projects. Therefore, the factors affecting the urban construction project in Djibouti are investigated and identified.

Most urban renewal or regeneration initiatives in Djibouti have failed as they have failed to meet stakeholder expectations in terms of quality, timeliness, and budget. The difficulties these projects often have in achieving their goals can lead to delays, cost overruns, and even project failure (Omar, 2018). According to World Urbanization Prospects (United Nations, 2018), this has resulted in wasted resources and adverse economic, fiscal, and social impacts. Due to inadequate financial planning and estimation, as well as failure to take into account political constraints and risk concerns, several projects experienced cash flow problems. Cost and time overruns were all too common. In addition, many failed to generate economic benefits for society (Taghipour et al. 2013). For this reason, the reasons for the failure of urban construction projects are disputed and unknown; Some attribute them to poor project planning, technical deficiencies, and political pressure, while others attribute them to a lack of risk assessment and poor financial planning (Kimura and Tsuruta, 2014). The pandemic has also changed the way we work and do business. Organizations must reinvent themselves in response to disruption if they are to achieve growth and sustainability (McKinsey 2022).

Therefore, further research is needed to identify the predictors of post-pandemic project success. The study aims to identify the factors responsible for the success of urban construction projects after the pandemic. Many previous studies have evaluated and examined the key success factors of urban renewal. However, there is a lack of studies that focus on the critical success factors for urban renewal projects in the context of large construction projects in post-pandemic Djibouti. Furthermore, there is a lack of quantitative research studies specifically on urban renewal projects in Djibouti. The aim of this study is therefore to identify the critical success factors for urban renewal projects in the context of large construction projects in Djibouti. This study includes

constructs such as urban construction project team engagement, project risk management, project planning, contractor competencies, and stakeholder communication. The results of this research will be useful for project managers and government agencies to identify the success factors for construction projects in Djibouti.

2.0 Literature Review

2.1 Theoretical Support

This study can be supported by three different theories. The predominant theory is the project management theory. This theory provides the fundamentals of project management that lead to project success. This includes the Project Management Institute (PMI) Project Management Body of Knowledge (PMBOK). This theory helps develop a framework for good project management practices. The second theory is the stakeholder theory (Freeman, 1984). This theory provides an understanding of identification and meeting the needs of key stakeholders in a project. The identification and management of stakeholders contribute to the success of the project. The third is the Innovation Diffusion Theory (Rogers, 2003). This theory will assist in the assessment of the adoption and diffusion of innovative technologies and best practices that will affect the success of construction projects.

2.2 Relationship between Project Scheduling/Plan and Project Success

The project schedule and plan are created to best plan and organize events, resources, and deadlines to ensure a project is completed on time. This is done to ensure that the project is completed on time and according to plan (Li, 2017). During the planning phase, a project timeline is created, which includes a project schedule with start and end dates, as well as key project milestones. According to PMBOK, this pillar is the creation of a schedule management plan. In addition, it is also the development of expectations of how the schedule will be met (Project Engineer, 2018).

According to PMBOK, managing the project schedule is one of the most important components of management (Project Engineer, 2018). Scheduling/Planning is an essential time management tool that includes the dates and times of various events, activities, and tasks to implement a successful project. It is also the process of deciding how to allocate tasks and resources across numerous options, and the person responsible for creating a schedule is known as the planner (Nguyen & Chua, 2014). An efficient strategy for planning and scheduling a project is to consider all other variables involved in its execution that need to be managed, such as resources (money, people, and time), as well as other variables that must be properly executed (Lev et al., 2013).

Numerous studies have examined the relationship between project planning and project success (Saradar, 2013; Wang and Gibson, 2008). A literature review by Serrao (2013) revealed that there is a close connection between planning and project success. Previous studies have shown that planning leads to successful projects (Wang and Gibson, 2008). The planning effort reduces risk and increases project success. On the contrary, a lack or little planning leads to project failure (Thomas, Jacques, Adams, and Kihneman-Woote, 2008). A study conducted by Huemann, Keegan, and Turner (2005) found that effective project planning and scheduling are critical to the success of IT projects. The study found that projects with a clearly defined timeline and plan are more likely to achieve their goals, meet stakeholder expectations, and create value for the organization. Similarly, a study by Kerzner (2013) concluded that effective project planning and

scheduling are critical to the success of any project, regardless of its size or complexity. The study found that projects with a clear and detailed plan are more likely to be completed on time, within budget, and to required quality standards. The following hypothesis was developed for testing.

H1: Project schedule/plan is significantly related to project success.

2.3 Relationship between Project Team Commitment and Project Success
The commitment of all stakeholders and organizational leaders is crucial for the successful completion of a particular project (Iyer and Jha, 2005). The study by Doloi et al. (2012) showed that lack of commitment was one of the main causes of project failure. The project team is one of the most important stakeholders in a project. The project team is a crucial factor and has a great influence on the success of any project.

According to Pinto (1990), project managers should be made aware of the need for personnel selection and training whenever the organization begins a new or unfamiliar project. He added that project performance depends on the maturity, competence, and skills of the project team member. Rosacker and Olson (2008) added that there are some things to consider when implementing this factor, such as whether selection and training of project team members is possible or whether existing people should be used. Buvik & Tvedt (2017) added that the organization must ensure that the subordinates are honest that the company has the appropriate people for this project or is willing to hire external support and that the team has an appropriate level of support and has technical knowledge and specialist knowledge. Past studies have shown that team commitment is associated with project success (Bal & Bryde, 2015; Sethi and Nicholson, 2001). Commitment can be subdivided into personal commitment and organizational commitment. The level of personal and organizational commitment required to complete a project is consistently ranked as the most difficult obstacle for project managers to overcome (Bal & Bryde, 2015). In projects, commitment can also be subdivided into project commitment and team commitment. A study by Buvik and Tvedt (2017) revealed different effects of the two types of commitment which are team commitment and project commitment. In a study by Nguyen, et al. (2004), commitment to the project was very highly ranked by all the respondents. The study highlighted that commitment is widely recognized as an important determinant for successful projects. Commitment reflects that all project team members are engaged and interested in a project. Sethi and Nicholson (2001 added that highly committed project teams will strive to contribute more to a project, and this leads to the success of projects. The following hypothesis was developed for testing.

H2: The commitment of the project team is significantly related to the success of the project.

2.4 Relationship between Contractors' Competencies and Project Success
Contractor or supplier management is an important function in any project and plays a significant role in project success (Project Management Institute, 2023). Therefore, the most crucial decision in a project is selecting a competent contractor (Elms, 2002). Previous studies have shown that the success of projects depends heavily on contractors and their competencies (Doloi et al. 2011; Banki et al., 2009, Ng et al., 2009). As reported by Yawelii et al. (2005), choosing the right contractor leads to cost savings and increases the overall quality of the project. Through effective contractor and supplier management, companies can reduce the risk associated with projects. (Project Management Institute, 2023). A study by Singh and Tiong (2006) with 128 questionnaire

responses concluded that the contractor's experience and competence are one of the most critical factors in the success of projects. In another study by Doloi (2009), which collected data from medium-sized construction projects in Australia, the results showed that contractor expertise is key to project success. According to Doloi et al. (2011), the contractor's performance and knowledge are critical to the effective completion of a project. The researcher added that when choosing the right contractor for the right project, customers often do their best to make the best possible decisions. Another study by Alzahrani and Emsley (2013) revealed that a clear understanding of contractors' performance can lead to the enhancement of existing knowledge of construction project success. The following hypothesis was developed for further testing.

H3: Contractor competencies are significantly related to project success.

2.5 Relationship between Risk Management and Project Success

Risk is defined as the impact of a situation that leads to an unfavourable outcome. Project risk refers to an event or outcome that can be either positive or negative (Anantatmula and Fan, 2013). Risks can exist in all phases of a project, but their impact varies from project to project depending on the organization's risk tolerance and risk appetite (Crdenas et al., 2014). Due to the current environment, which is associated with uncertainty and volatility, risks play an important role in projects today. Risk can also be broken down into multiple categories or dimensions. Along the product life cycle, Zhou et al. (2008) proposed five risk categories. A study by Wu et al. (2017) found that project success was influenced by risk factors related to the designer, contractor, subcontractor, client, and government. The goal of risk management is to reduce the occurrence and impact of project-destroying incidents. Conversely, every potentially beneficial incident should be exploited (Hartmann & Juepner, 2017). The goal of risk management is to reduce the occurrence and impact of project-destroying incidents. Conversely, every potentially beneficial incident should be exploited (Hartmann & Juepner, 2017).

Several studies have examined the relationship between risk management and the success of construction projects (Al-Momani, 2013; Reed and Angolia, 2018). Based on Reed and Angolia's (2018) Theory of Reasoned Action, a study of 557 virtual projects found a strong connection between risk management and project success. Another study by Al-Momani (2013) also found a positive relationship between effective risk management and project success. The study found that construction projects where risk was managed effectively had a higher likelihood of success than those where it was not. Effective risk management ensures that potential risks are identified early and managed appropriately, reducing the likelihood of project delays, cost overruns, and quality issues. From a cost, time, and quality perspective, a study by Akintoye and MacLeod (1997) found that risk management has a significant impact on project success in terms of cost, time, and quality. The study found that the most common risks in construction projects are related to design, procurement, and construction and that effective risk management strategies should be applied throughout the project lifecycle. The study also recommended that risk management be integrated into the overall project management plan to ensure it is given due consideration and not overlooked. For further testing, the following hypothesis was developed.

H4: Risk Management is significantly related to project success.

2.6 Relationship between Stakeholder Communication and Project Success

According to the Project Management Institute, "Stakeholders are those who have a stake or interest in a company's or organization's project or strategy, who are affected in some way by the project, and thus have an interest in influencing it" (Vogwell, 2003). The first phase in a project, according to the PMBOK criteria, is to identify stakeholders and guarantee that all stakeholders are pleased (Project Engineer, 2023). A project communication plan must be designed to assist the team in defining and understanding with whom and how to communicate. A stakeholder management plan must be prepared, as mentioned in the PMBOK guidelines. This strategy must outline how the project intends to communicate and interact with each stakeholder.

Previous research has demonstrated a link between stakeholder communication and project success (Bao, Sun, and Yu, 2021). Communication, particularly communication with stakeholders, is a critical activity in project management (Welch & Jackson, 2007). The purpose of stakeholder management, which covers both internal and external stakeholders, is for the project team to understand the stakeholders and be able to make decisions on how to engage and receive support from the stakeholders (Yang, Wang, & Jin, 2014). According to Bratukins and Treija (2017), effective communication is critical in large urban construction projects. The authors emphasized the importance of communication in achieving successful project completion.

Bao, Sun, and Yu (2021) discovered that stakeholder participation is positively associated with the success of urban building projects in their study. Effective communication with stakeholders is a critical component of stakeholder engagement because it allows them to make suggestions and feedback, identify potential dangers, and develop effective mitigation plans. This reduces project risks and improves project outcomes. In a study conducted by Liao, Fei, and Wu (2019), project success was found to be positively connected with stakeholder participation and communication. Effective communication increases stakeholder confidence and trust in the project, which may lead to additional resources and support. A project is defined by its many phases or cycles. Various communication approaches may be required at various stages of the project. According to a study by Turkulainen et al. (2015), a dynamic approach is suggested to comprehend stakeholder management. Additionally, a variety of communication techniques must be used repeatedly over the product life cycle. The following hypothesis was developed for testing:

H5: Stakeholder communication is significantly related to project success.

3.0 Methodology and Research Design

This was a quantitative research based on a positivist philosophy and a deductive approach. (Saunders et al., 2016). The deductive approach was utilized to analyse the causal relationship that exists between the variables. For data collection, the time horizon was cross-sectional. A survey method was used to collect data using a self-administered questionnaire. The survey method and questionnaires enable the collection of a high volume of data (Sekaran & Bougie, 2016. And finally, to do data analysis, SPSS version 28 and Smart-PlS version 4 were utilised.

Non-probability sampling strategy was used. The sample size calculation was based on the formula by Green (1991). The formula is 50 + 8m (m is the number of predictors. As a result, given that we have 5 independent variables, the calculation was 50 plus 8 (5), which is 90 respondents. Based

on this, the target sample size was 100 respondents. The target population was construction project team members in Djibouti.

This questionnaire was divided into two parts. The first part consists of demographic questions on the respondents' background, particularly gender, marital status, and working experience. The second part was questions relating to the measurement of all constructs in this study. Questions on project success were adopted from Pinto & Slevin. (1998). For project team members, the questions were adapted from a study by Pinto and Slevin (1998). Questions on contractor competencies were adapted from Alzahrani & Emsley (2013). The questions on project risk were adapted from Haitham et al. (2013). The questions on stakeholder communication and project scheduling were adapted from Pinto and Slevin (1998).

In this study, data from the questionnaire were first processed and transferred to an Excel file. IBM SPSS and Smart Pls 4 statistical software tools were then used to analyse the data, with IBM SPSS performing the descriptive analysis and Smart PLS producing inferential statistics, reliability testing, and validation testing. The Smart Pls tool was used to assess reliability, validity, and hypothesis testing. Reliability refers to the degree of consistency of data in estimating the proposed latent construct, and the Composite Reliability Index (CR) can be used to assess the reliability of a measurement model (Hair et al., 2021). It is recommended that the Cronbach alpha value score be at least 0.70 or greater. The Smart Pls method can also be used to assess convergent and discriminant reliability. Convergent validity is not violated if all elements of the measurement model are statistically important and the Average Variance Extracted (AVE) for each construct should be 0.5 or higher (Hair et al., 2021). According to Hair et al. (2021), low factor loadings of 0.50 and below should be considered for the deletion to improve validity. Discriminant validity refers to the extent to which a construct empirically differs from other structural model constructs, and the criteria of Fornell and Larcker (1981) were used to test discriminant validity. The Smart PLS software provided correlation coefficients and the level of significance of the hypothesized structural relationship among the constructs.

4.0 Results and Analysis

4.1 Respondents Demographics

This study had 165 respondents. Most were men (120 respondents). In the age group, most of them were 25 to 34 years old (59 respondents). In addition, 16 were in the 18-24 age group, 40 in the 34-44 age group, and 21 in the 55+ age group. In terms of educational level, most were graduates (66). In addition, High School, or lower level (9), Diploma or advanced level (23), and Master and above (63). In terms of years of work experience, most had more than 10 years of experience (80). Another 19 had less than 5 years of experience and 62 had between 5 and 10 years of experience.

4.2 Reliability and Validity

The researcher used reliability tests to determine the consistency of data that were analysed for this study. The reliability test was based on Cronbach's alpha and a general rule of thumb is that the data are acceptable if the alpha value is greater than 0.70. A value between 0.8 and 0.9 is considered good, and data with a Cronbach alpha above 0.9 is considered excellent in terms of reliability. The value of rho for all constructs in this analysis was greater than 0.8. In this study, the Cronbach alpha and composite reliability values were both above 0.8. This is good reliability and indicates that the reliability of the data collected in this study was good.

Table 1: Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Communication and Stakeholder	0.811	0.823	0.868	0.570
Contractor competency	0.834	0.842	0.883	0.603
Project Risk	0.881	0.884	0.906	0.546
Project Schedule	0.615	0.618	0.796	0.565
Project Success	0.780	0.783	0.873	0.696
Team Commitment	0.824	0.840	0.876	0.588

4.3 Convergent Validity

The reflective measurement model's third step was employed in the study to establish convergent validity, which aims to demonstrate the construct validity of the variables. See Table 1 for results. Convergent validity examines the cohesiveness and differentiation of a construct from its indicators (Hair et al., 2021). The researcher utilized mean variants (AVE) to analyze the facets of each model. The AVE, which is computed by taking the average squared loadings of all metrics contributing to the construct, needs to be at least 0.5 to indicate that the construct accounts for 50% of the item variation. The findings shown in Table 1 demonstrate that the research has established convergent validity, as all the Average Variance Extracted (AVE) values were higher than 0.5. The AVE values for Stakeholder, Contractor, Risk, Schedule, Project Team, and the dependent variable Project Success were 0.570, 0.603, 0.546, 0.565, 0.588, and 0.696, respectively. These results indicate that convergent validity is established.

Table 2: Discriminant Validity: Fornell Larcker

	Comm. and Stakeholder	Contractor competency	Project Risk	Project Schedule	Project Success	Team Commitment
Communication and Stakeholder	0.855					
Contractor competency	0.802	0.877				
Project Risk	0.801	0.838	0.739			
Project Schedule	0.656	0.644	0.680	0.752		
Project Success	0.782	0.826	0.728	0.595	0.834	
Team Commitment	0.825	0.776	0.841	0.673	0.815	0.767

4.4 Discriminant Validity

The next step in evaluating the reflective measurement model was to assess its discriminant validity. This step helped to provide further support for the model's construct validity. The examination of discriminant validity involved evaluating the relationship between the constructs, ensuring that each construct represents a single variable, and examining the connections between the constructs (Hair et al., 2021).

The Fornell-Larcker criterion was utilized to test discriminant validity. The Fornell-Larcker criterion compares the square root of the average variance extracted (AVE) with the correlation of latent constructs. The square root of each construct's AVE must be higher than the correlations with other latent constructs. As shown in Table 2, the discriminant validity was established.

Factor loadings represent the strength of the relationship between an indicator and the construct it is meant to measure, and high factor loadings indicate a good representation of the construct. The researchers compare the factor loadings of indicators with those of other construct variables to achieve discriminant validity. If the indicators consistently have the highest value, the construct being measured is distinct and separate from related constructs. The study's results showed that the construct being measured is distinct, and therefore, discriminant validity was achieved. As shown in Table 3, the items have higher loadings on their parent construct in comparison to other constructs in the study. Therefore, there is no issue of discriminant validity.

Table3: Cross loadings

	Communication and Stakeholder	Contractor competency	Project Risk	Project Schedule	Project Success	Team Commitment
CC1	0.678	**0.814**	0.715	0.507	0.683	0.657
CC2	0.691	**0.841**	0.692	0.479	0.707	0.649
CC3	0.595	**0.812**	0.620	0.478	0.605	0.565
CC4	0.497	**0.675**	0.500	0.411	0.522	0.464
CC5	0.626	**0.728**	0.696	0.612	0.664	0.648
CS1	**0.766**	0.618	0.657	0.563	0.549	0.610
CS2	**0.754**	0.450	0.509	0.361	0.436	0.433
CS6	**0.699**	0.596	0.606	0.470	0.603	0.648
CS7	**0.841**	0.652	0.713	0.548	0.640	0.667
CS8	**0.800**	0.676	0.732	0.514	0.683	0.709
DV3	0.651	0.724	0.679	0.494	**0.818**	0.678
DV4	0.686	0.701	0.660	0.490	**0.883**	0.696
DV5	0.619	0.638	0.632	0.507	**0.799**	0.666
PRM1	0.667	0.647	**0.777**	0.585	0.607	0.638
PRM10	0.553	0.592	**0.713**	0.428	0.619	0.595
PRM11	0.618	0.611	**0.746**	0.544	0.610	0.666
PRM12	0.609	0.571	**0.772**	0.548	0.508	0.586
PRM2	0.712	0.664	**0.786**	0.499	0.668	0.681
PRM7	0.650	0.694	**0.765**	0.522	0.565	0.644
PRM8	0.620	0.575	**0.741**	0.471	0.517	0.588

PRM9	0.661	0.592	**0.717**	0.425	0.536	0.563
PS1	0.500	0.530	0.558	**0.705**	0.421	0.488
PS5	0.457	0.431	0.476	**0.769**	0.485	0.509
PS6	0.529	0.501	0.506	**0.780**	0.433	0.521
TC1	0.692	0.684	0.735	0.585	0.728	**0.856**
TC2	0.593	0.545	0.637	0.512	0.554	**0.761**
TC6	0.577	0.585	0.545	0.508	0.486	**0.675**
TC7	0.567	0.528	0.578	0.512	0.585	**0.759**
TC8	0.714	0.623	0.702	0.473	0.721	**0.772**

4.5 Multicollinearity

Variance inflation factor (VIF) is utilized to check the formative collinearity of indicators in a study. A VIF value must be lower than 5 and VIF values above 5 show collinearity problems among the indicators (Hair et al., 2021). In this study, the VIF values are less than 5 as shown in Table 4. Therefore, there is no problem of multicollinearity.

Table 4: Multicollinearity

| Indicator	VIF	Indicator	VIF
CC1	3.372	PRM2	2.454
CC2	3.542	PRM7	2.045
CC3	2.190	PRM8	1.984
CC4	1.946	PRM9	1.736
CC5	1.653	PS1	1.179
CS1	1.831	PS5	1.224
CS2	1.614	PS6	1.314
CS6	1.445	TC1	2.365
CS7	2.093	TC2	1.912
CS8	1.781	TC6	1.437
DV3	1.586	TC7	1.640
DV4	2.014	TC8	1.589
DV5	1.572		
PRM1	2.432		
PRM10	2.075		
PRM11	2.214		
PRM12	1.728		

4.6 Coefficient of Determination (R-square)

The R-square is a statistical measure that shows how much of the dependent variable's variance is explained by the regression model. The R2 score, which ranges from 0 to 1, is an indicator of the precision of the prediction. In this study, the R Square value of 0.763 shows that the independent variables can account for 76.3% of the variation in the dependent variable, project success, in urban construction projects in Djibouti. The 5 independent variables of this study have a significant

contribution to the project's success. The high R Square value, as stated by Hair et al. (2021), indicates that the prediction accuracy is strong, and the value is considered acceptable.

Table 5: Predictive R-square

	R-square	R-square adjusted
Project Success	0.763	0.755

Figure 1 Path Coefficients
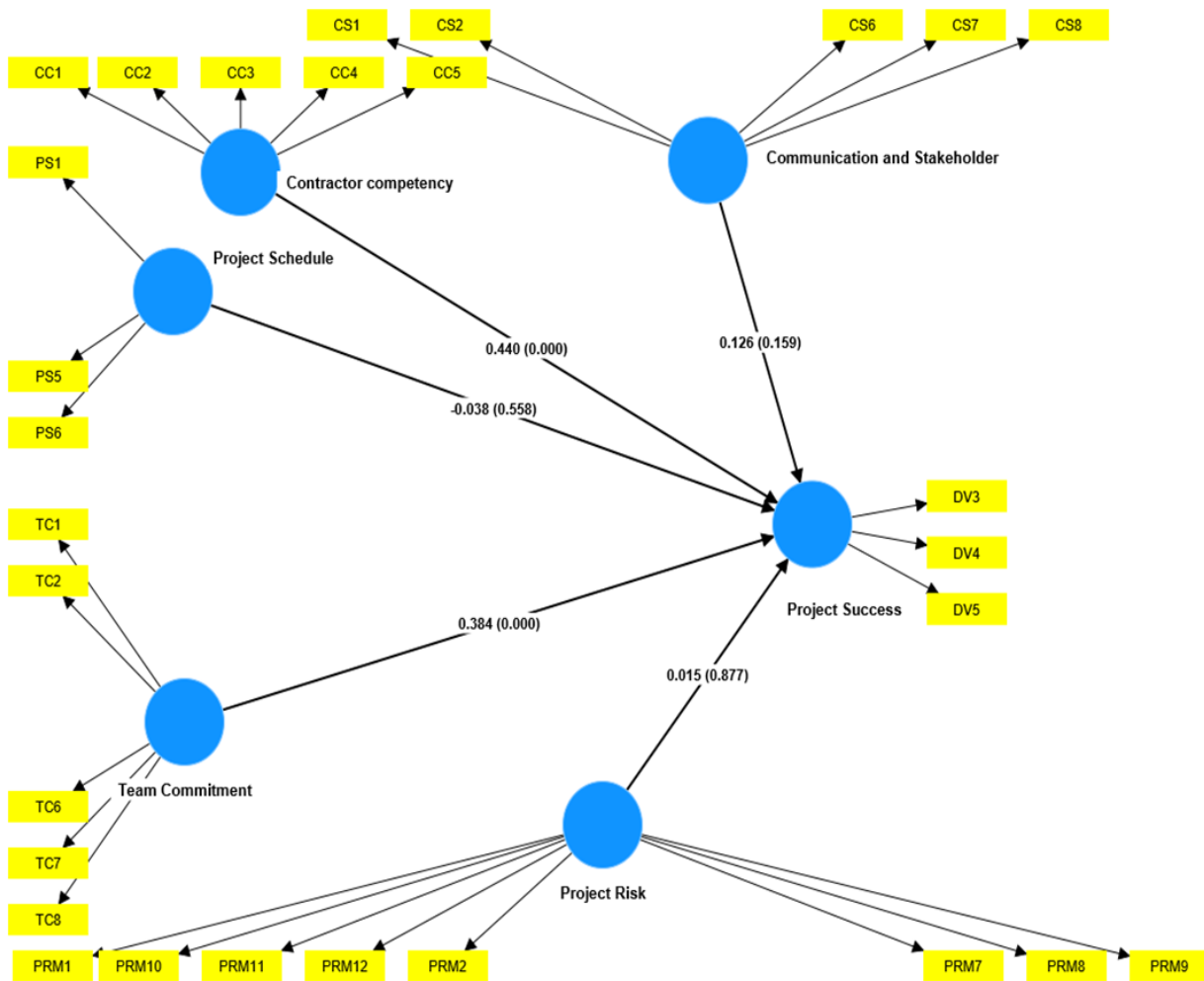
4.7 Path Coefficients (Hypothesis)
The relationships and the items are shown in Figure 1. All factors with low loadings were deleted. Bootstrapping was executed to determine the significance of estimated path analysis and process coefficients. In this study, 5000, subsamples were created by using bootstrapping. To evaluate the significance, the t-value and the p-value were checked. The t-value must be higher than 1.96 and

the p-value must be less than 0.05 to signify significant impact. For hypothesis, H1, the p-value is 0.558, which is higher than the significance level of 0.05 and the t-value is less than 1.96. Therefore, hypothesis H1 was not supported. The next hypothesis was to measure the relationship between project team commitment and the success of the project. The significance level is less than 0.05. and the t-value was more than 1.96. Therefore, hypothesis H2 was supported. The next hypothesis was to measure the relationship between project contractor competency and the success of the project. The significance level was less than p< 0.005 and the t-value was more than 1.96. Therefore, hypothesis H3 was supported. The next hypothesis was to measure the relationship between project risk and the success of the project. The significance level was more than 0.05 and the t-value was less than 1.96. Therefore, hypothesis H4 was not supported. The next hypothesis was to measure the relationship between project risk and the success of the project. The significance level was more than 0.05 and the t-value was less than 1.96. Therefore, hypothesis H4 was not supported. The next hypothesis was to test the relationship between stakeholder communication and project success. In this case, the p-value was more than 0.05 and the t-value was less than 1.96. Therefore, hypothesis H5 was not supported.

Table 6: Path Coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Project Schedule -> Project Success	-0.038	-0.034	0.065	0.586	0.558
Team Commitment -> Project Success	0.384	0.380	0.095	4.034	0.000
Contractor competency -> Project Success	0.440	0.439	0.083	5.293	0.000
Project Risk -> Project Success	0.015	0.023	0.095	0.155	0.877
Communication and Stakeholder -> Project Success	0.126	0.119	0.089	1.409	0.159

5.0 Discussion

The impact of project schedule/plan on the success of urban construction projects in Djibouti was insignificant as the P-value of 0.558 (p<0.05) indicated that there is no significant relationship between project planning/schedule and project success. The results deviated from past studies (e.g.: Serrador, 2013; Wang and Gibson, 2008). Previous studies have indicated that planning leads to successful projects (e.g.: Wang and Gibson, 2008). The deviation of the results in this study may be that the project schedule/plan is only a tool to facilitate other key variables that directly impact project success. Scholars such as Davis (2014) also suggest that project planning is used to generate project strategies, scope, and objectives and is only a technique to assist with the project's success strategies and principles. There can be other constructs such as contractor competency that are considered more important than project scheduling. Moreover, project scheduling is a task that is assisted by project planning tools and systems.

The study found a significant and positive relationship between project team commitment and project success of construction projects. The results are consistent with past studies (Iyer and Jha, 2005; Doloi et al., 2012). The results of this study further proved that the success and performance of the project are dependent on the commitment of project team members, and this encompasses the maturity level, expertise, and abilities of each member of the project team (Pinto, 1990). The results point towards the development of commitment and one of the key determinants of commitment is trust. The team members' commitment can be dramatically enhanced when there is a culture of trust.

The results of this study found a positive and significant relationship between project contractor competency and project success. Past studies have pointed out the key role played by vendors and contractors in a project. The results of this study also revealed that contractor competency had the highest impact on project success compared to the other predictors. The results are consistent with past studies (Elms, 2002; Doloi et al. 2011; Banki et al., 2009). The results are also in line with PMI which emphasizes contractor competency and management as important functions in any project. This study further provided proof that contractor competence plays an important role in project success (Project Management Institute, 2023).

This study also examined the impact of project risk management on the success of urban construction projects. This hypothesis was not supported (p-value > 0.05). The results of this study deviated from the results of some other past studies (Al-Momani, 2013; Reed and Angolia, 2018). One of the reasons for the deviation may be that this study looked at risk in totality. In reality, there are several types of risks such as cost risk, scope creep risk, operational risk, and communication risks. The impact and probability can differ among the different types of risks.

This study also examined the relationship between stakeholders' communication and the success of urban construction projects in Djibouti. This hypothesis was not supported (p> 0.05). The results of this study deviated from past studies (Bao, Sun, and Yu, 2021; Welch & Jackson, 2007). One possible explanation for the deviation may be that this study did not look at the communication with different parties. Furthermore, stakeholders' communication may have a lower impact on the success of projects in Djibouti.

5.1 Implications
Several practical consequences follow from this study. The results show that contractor competencies have the greatest impact on the success of construction projects in Djibouti. This was followed by the commitment of project teams. Project owners and project managers should realize that contractor or vendor management is an important function in any project and plays an important role in project success. The selection of the right contractor must follow strict criteria and procedures because, as shown in this study, the selection of a competent contractor is the most important decision in a project. Selecting the right contractor not only leads to the success of the project but also contributes to cost savings and the quality of project deliverables. This study also highlighted the importance of the project team's competence. Project owners and project managers should also establish a culture of trust and collaboration among team members. This can lead to higher levels of commitment and productivity. Project managers must recognize the importance of team commitment and keep the team motivated with high energy levels.

There are also some theoretical contributions from this study. The results of this study added to the existing knowledge on the predictors of project success. Some new insights such as the high impact of contractor competence and experience compared to project risk, stakeholder communication, and project scheduling.

5.2 Limitations and Recommendations for Future Research
Like other past studies, there were some limitations associated with this study. Firstly, this study did not examine the different stakeholders in the study. There are internal stakeholders and external stakeholders in a project. Future studies should consider including data from multiple stakeholders. This can provide perspectives from different parties involved in a project. Secondly, this study did not consider the life cycle of a project. Projects go through different phases during their life cycle. Therefore, it is recommended that future studies consider the project life cycle. to manage stakeholders throughout the project life cycle. This will provide broader insights into the complexities of projects during the different phases. Lastly, this study did not consider the effect of categorical variables as moderators. Moderators such as number of years of experience can provide more insights. It is recommended that future studies consider the moderating role of categorical variables.

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