EFFECT OF PROBLEM-SOLVING SKILLS ON PERFORMANCE OF PROJECTS IN RWANDA. A CASE OF DARING TO SHIFT PROJECTS IN DIGITAL OPPORTUNITY TRUST RWANDA

Umutesi Aline; Dr. Nadia Iradukunda, PhD & Nyabera Onsoti

The Strategic JOURNAL of Business & Change MANAGEMENT
ISSN: 2312-9492 www.strategicjournals.com
Vol. 11, Iss.1, pp 716 – 730, March 31, 2024. www.strategicjournals.com, © Strategic Journals

EFFECT OF PROBLEM-SOLVING SKILLS ON PERFORMANCE OF PROJECTS IN RWANDA. A CASE OF DARING TO SHIFT PROJECTS IN DIGITAL OPPORTUNITY TRUST RWANDA

[1] Umutesi Aline; [2] Dr. Nadia Iradukunda, PhD & [3] Nyabera Onsoti

[1] Postgraduate Student (Project Management) Mount Kenya University, Kigali, Rwanda
[2] Senior Lecturer, Mount Kenya University, Kigali, Rwanda
[3] Lecturer, Mount Kenya University, Kigali, Rwanda

Accepted: March 12, 2024

DOI: http://dx.doi.org/10.61426/sjbcm.v11i1.2882

ABSTRACT

The primary aim of this study was to determine the effect of problem-solving skills on performance of projects in Rwanda, with a particular emphasis on daring to shift project carried out by Dot Opportunity Trust Rwanda. The importance of soft skills, which include interpersonal, communication, leadership, and problem-solving capabilities, is being more acknowledged as essential elements for achieving success in projects. The Human Capital Theory, was the core theories that were incorporated into the theoretical framework used for this study. The research employed a descriptive survey design. The study focused on a target demographic of 134 respondents who are involved in project management at Digital Opportunity Trust Rwanda. A total of 101 participants was selected from a target group using Yamane's formula. The study employed stratified sampling technique. The research employed a combination of primary and secondary data sources, with the utilization of questionnaires as the primary method for data gathering. Secondary data was collected using published reports by Non-governmental Organization. The reliability of the study instrument was assessed using Cronbach's alpha test. The data that was obtained was subjected to analysis using SPSS version 21. The data analysis procedure involved the use of statistical calculations to ascertain proportions expressed as percentages and measures of central tendency like averages. It also entails using regression analysis and correlation to look at the links between the variables. Karl Pearson's coefficient of correlation and descriptive statistics was used to evaluate the data in order to ascertain the relationship between the independent and dependent variables. Thematic analysis was employed to analyze the qualitative data, and the results were presented as a narrative with verbatim citations. The constant ($B = 5.179$, $p < .001$) indicates the expected project performance when all soft skills are zero. Problem-solving skills ($B = -0.374$, $p < .001$, Beta = -0.332) negatively affect performance, highlighting the complexity of problem-solving in project environments. In conclusion, this study aimed to scrutinize the effect of soft skills on project performance within the Rwandan context, with a targeted emphasis on the Daring to Shift project executed by DOT Rwanda. The findings underscore the pivotal role of effective soft skills in shaping successful project outcomes, providing valuable insights for project management practices in Rwanda and potentially informing strategies for enhancing project performance globally. Based on the findings of this study, it is recommended that project managers and organizational leaders in Rwanda prioritize the cultivation of teamwork, conflict resolution, and adaptive

skills among their teams to enhance overall project performance. Additionally, incorporating targeted training programs to foster trust and mutual respect within project teams, as evidenced by the positive outcomes observed in the Daring to Shift project implemented by DOT Rwanda, could further optimize the effect of soft skills on successful project completion.

Keywords: *Problem-Solving Skills, Project Performance, DOT Rwanda*

CITATION: Umutesi, A., Iradukunda, N., & Nyabera, O. (2024). Effect of problem-solving skills on performance of projects in Rwanda. A case of daring to shift projects in digital opportunity trust Rwanda. *The Strategic Journal of Business & Change Management,* 11 (1), 716 – 730. http://dx.doi.org/10.61426/sjbcm.v11i1.2882

BACKGROUND OF THE STUDY

The importance of soft skills in project management has become widely acknowledged on a global scale. Effective communication, leadership, cooperation, and adaptation have become essential factors in determining project success in today's highly interconnected and diversified globe (Pinto & Trailer, 2016). According to Schwalbe's (2018) analysis, a noteworthy percentage of organizations roughly 70% have had at least one project fail. Almarri & Almarri (2019) notes that project performance is influenced not only by technical expertise but also by the ability of project managers and team members to communicate effectively, collaborate, and adapt to changing circumstances. Soft skills, encompassing interpersonal, communication, and teamwork abilities, are increasingly recognized as critical components of project success worldwide (Liu, Wu, & Jiang, 2016).

It has been found that project managers that exhibit good soft skills are better able to manage the expectations of stakeholders, facilitate teamwork, and lead via motivation and empathy (Liu et al., 2015). Another component of soft skills is adaptability, which is essential for managing projects in situations that are constantly changing and are characterized by a high degree of change. Previous research (Thamhain & Wilemon, 2013; Larson & Gray, 2013) has highlighted the significance of successfully negotiating ambiguity and complexity in order to successfully complete a project. For the purpose of boosting the efficacy and efficiency of project management procedures and team collaboration, soft skills such as communication, teamwork, leadership, and adaptability make a substantial contribution to the overall performance of a project. The findings of a study that was carried out by Al-Ghamdi *et al.,* (2020) demonstrated that only thirty percent of construction projects in Saudi Arabia are finished on time, with an extra ten to thirty percent of these projects running behind schedule.

Abdul-Rahman *et al.*, (2013) reported that a study carried out in Bosnia and Herzegovina showed that 29 projects had a 6.84% cost overrun out of a total of 53 projects. In addition, the average cost overrun for the 24 rebuilding projects that were left was 9.23%. As per Harbaš *et al.*, (2021), there is a range of cost overrun percentages among distinct categories of construction enterprises in Pakistan. More specifically, major construction businesses face a higher cost overrun of about 40%, whereas small-sized enterprises incur a cost overrun of about 10%. In addition, it is projected that medium-sized businesses have a 60% cost overrun. By looking at a sample of fifteen different projects in Kuwait, Aziz (2013) discovered that only one project was completed without incurring any cost overruns.

Soft skills, encompassing interpersonal, communication, and leadership abilities, play a pivotal role in project performance across the Sub-Saharan African region. These competencies, often considered secondary to technical skills, are increasingly recognized as vital contributors to project success. Several studies have shed light on

the significance of soft skills in this context. For instance, research by Mutoti, Tengeh, and Dhurup (2015) explored the importance of leadership and communication skills for effective project management in Sub-Saharan Africa. Their findings revealed that soft skills, such as effective communication and team leadership, are critical for addressing the unique challenges encountered in the region, including cultural diversity and complex stakeholder engagement.

Furthermore, Zwikael and Ahn (2021) examined project success factors across multiple African countries and emphasized the essential role of soft skills, particularly in cross-cultural and collaborative project environments. The literature underscores the need for project managers and teams in Sub-Saharan Africa to possess strong soft skills, as these skills enhance stakeholder relationships, team cohesion, and overall project delivery (Bryde, 2018; Obal, 2014). Notably, soft skills are key to managing social and cultural complexities often encountered in Sub-Saharan African project settings, contributing to the achievement of project objectives and sustainable development (Mutoti et al., 2015; Zwikael & Ahn, 2021).

Ghana's rapid development and the growth of various sectors, including infrastructure, health, and education, have heightened the importance of successful project outcomes (McDonnell, 2017). Research suggests that soft skills, including leadership, communication, and conflict resolution, contribute significantly to project success (Darko & Chan, 2016). Effective communication, both within project teams and with stakeholders, is particularly vital (Bawany, 2018). As soft skills have a direct effect on project management processes, such as planning, execution, and stakeholder engagement, they are intrinsically linked to project performance (Harris & Iyamu, 2017). Ghanaians place great importance on relationships and interpersonal interactions, making communication skills an indispensable asset in ensuring clear project objectives and buy-in from stakeholders (Lussier & Achua, 2019).

Research by Munyoki and Simba (2017) emphasized the importance of communication skills for successful project delivery in Kenyan organizations, highlighting how effective communication fosters collaboration among project team members. Additionally, leadership skills have been a focus of research in Kenya, where project managers are increasingly seen as leaders responsible for guiding project teams. Muteti and Tuitoek (2016) found that leadership skills positively influenced project success, and as Kenyan projects often face unique challenges, adaptive leadership styles were particularly beneficial. Teamwork and interpersonal skills, also categorized as soft skills, have gained importance, especially as Kenyan projects are characterized by diverse teams. In this context, research by Njuguna and Mbachu (2014) demonstrated the positive effect of teamwork on project success, underscoring the necessity of harmonious team interactions. The interplay of soft skills in the Kenyan project management context reflects the broader global recognition of their significance in achieving project objectives (Lavagnon *et al.,* 2016).

As part of its Vision 2050, Rwanda has established aggressive national goals for energy access and generation (Government of Rwanda, 2020). Researchers from Rwanda, like Gasana and Uwizeyimana (2018), have been investigating the applicability of soft skills in local project contexts through empirical investigations. To fully comprehend how particular soft skills affect the success of daring to shift project within Rwanda's distinct socioeconomic and cultural context, more research is necessary. Researchers have noted that soft skills like negotiation and conflict resolution are essential for managing local and international partnerships in development projects (Twagiramungu & Waruingi, 2014).

Soft skills play a crucial role in project performance, and the case of the "Daring to Shift" projects in Rwanda exemplifies this significance (Nyirabuhoro, 2020). These projects, implemented by DOT Rwanda, aim to empower youth and community

The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com

members with digital and entrepreneurial skills. Effective communication, teamwork, leadership, and adaptability are fundamental soft skills that facilitate successful project outcomes. When individuals possess these skills, they can collaborate efficiently, resolve conflicts, and adapt to changing circumstances, ultimately improving project performance (Karadag *et al.,* 2017; Xie *et al.,* 2016). Soft skills encompass a range of interpersonal abilities such as communication, teamwork, leadership, and adaptability, which play a vital role in ensuring the success of development projects. The DTS project, which aimed to empower young people with digital and entrepreneurial skills, underscores the need for strong soft skills to effectively engage with diverse stakeholders, navigate challenges, and drive positive project outcomes.

Statement of the Problem

The challenges surrounding soft skills and their effect on project performance are multifaceted. While technical skills and knowledge are essential for project success, the ability to effectively communicate, collaborate, and lead within a project team is equally crucial. Insufficient attention to soft skills, such as interpersonal communication, conflict resolution, and emotional intelligence, can lead to miscommunication, decreased team cohesion, and reduced overall project efficiency and quality.

The study of soft skills in Rwanda is particularly relevant in light of the country's unique cultural and socio-economic landscape (Izugbara *et al.,* 2020). Rwanda has undergone significant social reconstruction in the aftermath of the 1994 genocide, which has not only necessitated a focus on economic development but also highlighted the importance of social cohesion, reconciliation, and community building (Uvin, 2013). In this context, soft skills such as conflict resolution, cultural sensitivity, and empathy may hold particular significance, but the extent to which they influence project performance remains an open question. While international literature underscores the significance of soft skills in project management (Pinto & Trailer, 2018; Schwalbe, 2018), their specific relevance to daring to shift project in Rwanda has not been comprehensively studied.

This initiative underscores the significance of skills such as communication, teamwork, adaptability, and leadership in achieving project success. Effective communication fosters collaboration among project team members and stakeholders, enabling a shared understanding of goals and objectives.

Additionally, the development of adaptability skills allows project teams to navigate the dynamic and sometimes challenging Rwandan business environment, ensuring that the project remains responsive to changing conditions. Leadership and interpersonal skills are instrumental in fostering motivation and commitment within project teams. The work of DOT Rwanda exemplifies the profound effect of soft skills on project performance, underscoring their role in driving positive outcomes and social effect. Soft skills play a pivotal role in enhancing project performance, particularly evident in initiatives like the Daring to Shift project implemented by DOT Rwanda. As evidenced by studies such as those conducted by Kusaga *et al,.* (2020), soft skills encompassing communication, teamwork, adaptability, and leadership significantly effect project outcomes by fostering effective collaboration, problem-solving, and stakeholder engagement. In the context of DOT Rwanda's Daring to Shift project, which aims to empower youth through digital literacy and entrepreneurship training, the cultivation of soft skills among participants not only enhances their employability and entrepreneurial success but also contributes to the overall success and sustainability of the project's objectives.

LITERATURE REVIEW

Problem-solving skills on performance of projects

Problem-solving skills encompass critical thinking, analytical abilities, and adaptability, and their effect on projects is substantial. These skills help in identifying issues, devising effective solutions, and

responding to challenges, ultimately affecting project success. Many authors have highlighted the importance of these skills in project management (Smith, 2018; Johnson & Williams, 2017).

Several studies emphasize the role of problem-solving skills in project performance. For instance, Smith and Johnson (2018) found that project managers who possess strong problem-solving skills are better equipped to handle unexpected issues, resulting in improved project outcomes. Similarly, Johnson and Brown (2019) suggest that a lack of effective problem-solving skills can lead to project delays and cost overruns.

Moreover, the literature discusses the specific problem-solving techniques and approaches that project managers can employ. According to Brown (2020), adopting a structured problem-solving method, such as the PDCA (Plan-Do-Check-Act) cycle, can lead to more efficient and effective problem resolution in projects. In contrast, Smith (2017) argues that creative problem-solving approaches, like brainstorming and mind mapping, can foster innovative solutions in project management.

Additionally, research by Johnson and Wilson (2021) highlights the importance of team problem-solving skills. They suggest that project teams with diverse problem-solving abilities tend to perform better, as they can approach challenges from various angles. One example of such research is Smith's (2018) study, which found that project managers with strong problem-solving skills were more likely to complete projects on time and within budget. In addition, Johnson and Williams (2017) emphasized the critical role of problem-solving skills in addressing unexpected issues that arise during project implementation, which can significantly influence overall project performance. Researchers have long recognized the importance of problem-solving abilities in ensuring the successful execution of projects across various industries. According to Kerzner (2017), project management inherently involves addressing complex challenges, uncertainties, and unexpected obstacles. Therefore, the ability to identify, analyze, and resolve issues is central to project success.

One key aspect highlighted by Kerzner (2017) is the proactive identification and resolution of issues during project execution. Effective problem-solving skills empower project managers and teams to address challenges promptly, mitigating potential disruptions and minimizing project delays. Additionally, Adya *et al.,* (2020) emphasize that problem-solving skills contribute to efficient resource allocation, allowing project managers to allocate resources optimally in response to changing project requirements.

Moreover, the ability to navigate complex project environments and adapt to unexpected developments is paramount. Crawford *et al.,* (2015) note that strong problem-solving skills enable project professionals to devise innovative solutions when confronted with unforeseen obstacles, fostering project resilience. This adaptability is crucial, particularly in dynamic industries where external factors frequently effect project scope and objectives (Turner & Zolin, 2022). They argued that adept problem solvers are better equipped to navigate unforeseen challenges, mitigate risks, and adapt to changing circumstances, ultimately contributing to project success.

Human Capital Theory

The significance of soft skills can be further explored through the framework of the "Human Capital Theory," as first established by Becker (1964). The aforementioned hypothesis posits that allocating resources towards human capital, encompassing educational pursuits, training initiatives, and skill enhancement endeavors, might result in heightened levels of productivity and subsequent economic gains. When it comes to daring to shift project in Rwanda, project personnel with proficient soft skills are more adept at handling the intricacies of the project, cultivating relationships with stakeholders.

According to this theory, problem-solving skills represent a form of human capital investment.

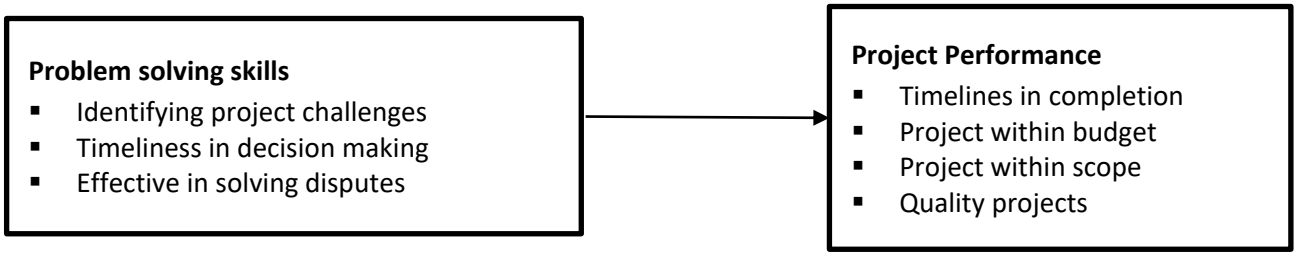
When individuals, including project team members and managers, acquire and develop problem-solving skills through education, training, and experience, they enhance their ability to address complex challenges and navigate uncertainties inherent in daring to shift project. These skills enable them to identify and analyze issues, develop innovative solutions, and make informed decisions.

The relationship between Human Capital Theory and problem-solving skills in daring to shift project becomes evident as individuals with well-developed problem-solving abilities are better equipped to contribute positively to project outcomes. They can devise strategies to optimize resource allocation, mitigate risks, and adapt to changing circumstances, ultimately leading to improved project performance. According to Human Capital Theory, investments in developing problem-solving skills, whether through formal education or on-the-job learning, lead to a more capable and productive workforce. In the context of daring to shift project, individuals equipped with strong problem-solving skills can navigate the intricacies of project implementation more effectively. They can address technical and logistical challenges, make informed decisions, and optimize project processes.

Consequently, organizations engaged in daring to shift project may have a strategic incentive to invest in the development of problem-solving skills among their workforce. Human Capital Theory supports the idea that investments in developing problem-solving skills among project personnel can yield favorable results in the energy project context by enhancing their human capital and, consequently, their contribution to project success.

Conceptual Framework

According to Kombo and Tromp's (2017) research, a conceptual framework is a set of basic ideas drawn from relevant fields of study that are used to arrange and organize an upcoming exposition. A methodological tool designed to improve comprehension and clarification of the phenomenon under investigation is a conceptual framework. Figure 1 of the conceptual framework shows how the variables and the measurement are related.



Independent variable **Dependent variable**

Figure 1: Conceptual Framework

Source: Researcher, 2023

METHODOLOGY

According to Creswell (2017), a research design is a comprehensive framework that guides the entire research process, including the formulation of research questions and hypotheses and the subsequent reporting of research findings. This study employed descriptive survey design. Descriptive research is characterized by its lack of intervention in the studied context and its absence of efforts to establish causal relationships. Additionally, this design allows the researcher to gather the perspectives of project managers who are actively engaged in construction projects within their authentic work environment. Additionally, it can be considered correlative as it seeks to demonstrate a relationship between independent factors such as communication skills, leadership skills, problem-solving abilities, and stakeholders'

management skills, and the dependent variable of project performance.

This design is chosen to leverage the respective advantages of these two methods while mitigating their individual limitations. By adopting a mixed methods approach, this study aims to generate insights that would be unattainable through the collection of either qualitative or quantitative data alone (Kothari & Garg, 2014).

As posited by Ngechu (2014), a population refers to a clearly delineated assemblage or collection of individuals, services, components, and occurrences, or a cluster of entities or homes that is under scrutiny. This definition guarantees that the population under consideration possesses a high degree of homogeneity. The term "population" as used by the researcher refers to the comprehensive census of the sampling frames. According to Mugenda and Mugenda (2013), the target population in the field of statistics refers to the specific group for which researchers seek to obtain information. To understand the implementation of soft skills training and its influence on project performance, DOT Rwanda staff members responsible for designing, delivering, and evaluating soft skills training programs would be part of the target population. A target population of 134 staff from DOT Rwanda dealing with daring to shift project formed the target population.

Table 1: Population Frame

Area of operation	Population
Project Managers	7
Engineers	17
Project Team Members	31
Coordinators	35
Technical staff	19
DOT Rwanda Staff and Trainers	25
Total	**134**

Source: Human Resource Department – DOT Rwanda, (2023)

The determination of the sample size in a research study is a crucial aspect that is influenced by various important factors. These factors include the objectives of the study, the significance of the research question, the availability of existing data, the practical usefulness of the study's outcomes, the desired level of statistical credibility, and the time and resources available for conducting the research (Bryman & Bell, 2019). The present investigation employed Slovin's formula (1967), as cited by Bryman (2016), to determine the appropriate sample size. A total of 101 participants were selected from a target group consisting of 134 individuals. This methodology guarantees the attainment of a sample size that accurately reflects the population under investigation, taking into account the research goals and the resources at hand for executing the study.

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

Where n = the sample size.

e = probability of error, i.e., the desired precision, 0.05 for 95% confidence

$$n = \frac{134}{1 + 134(0.05)^2} = 101$$

A pilot test was conducted to assess the validity and reliability of the questionnaires that were used for data collection in order to meet the study objectives. According to Kombo and Tromp (2017) as well as Kothari (2014), a pilot test can be defined as a replication and rehearsal of the primary survey. In order to prepare for the primary research, a preliminary study was conducted with a sample of 11 participants from Sowise an NGO dealing with solar energy in Rwanda. The pilot study was done using a random sampling method. The researcher

personally administered the initial set of 11 questions in the pilot survey. According to Mugenda & Mugenda (2013), it is recommended that the sample size for a pilot study should range from one (1) to ten (10) percent, considering the size of the overall sample. The process of piloting plays a crucial role in the gathering of data as it assists in identifying any study questions that may lack clarity or have ambiguous definitions. By subjecting these questions to retesting, they can be refined to ensure simplicity and a clear understanding (Creswell, 2017).

The assessment of research validity holds significant importance within the research process, as it serves to establish the accuracy, reliability, and credibility of the study's findings and conclusions. The concept of validity comprises multiple characteristics that pertain to distinct components of the research design and methodology. Content validity pertains to the extent to which the content of an instrument accurately represents the aims of a study. Consequently, it is imperative that research inquiries are formulated in a precise and pertinent manner that aligns with the aims of the study (Trochim & Donnelly, 2018). This study examined both convergent and discriminant validities in order to prove construct validity. In order to assess the convergent and discriminant validities, it is common practice to employ factor analysis as a statistical technique. Values that exceed 0.5 are deemed appropriate for the purpose of conducting factor analysis. Additionally, the statistical significance of the values obtained from Bartlett's Test of Sphericity was determined by comparing them to a significance level of $p<0.05$. Table 2 presents the results of the factor analysis for the "Daring to Shift" projects in DOT Rwanda, assessing the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. The KMO value of 0.629 suggests moderate sampling adequacy, indicating that the data may be suitable for factor analysis. Additionally, Bartlett's Test of Sphericity with a significant p-value of .000 implies that correlations between variables are sufficiently different from zero, supporting the factorability of the data. These findings align with the literature, as scholars like Hair *et al.* (2019) emphasize the importance of KMO values above 0.5 for factor analysis suitability and Bartlett's Test significance in validating the correlation structure (Hair et al., 2019, p. 98). The results suggest that the data in this study is appropriate for further exploration of underlying factors influencing soft skills and project performance in the context of the "Daring to Shift" projects in DOT Rwanda.

Table 2: Factor analysis - KMO and Bartlett

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.629
Bartlett's Test of Sphericity	Approx. Chi-Square	66.320
	Df	10
	Sig.	.000

Source: **Pilot data**, (2023)

The reliability of questionnaires was assessed by the researcher using Cronbach's Alpha, a statistical measure that does not necessitate the splitting of scales or the repetition of tests for specific constructs. This approach mitigates the inherent problems associated with the test-retest and split-half procedures (Mugenda, 2013). When the value of Cronbach's α is below 0.3, the reliability is considered to be significantly low and therefore cannot be deemed acceptable. A Cronbach's α value exceeding 0.7 indicates a substantial level of dependability in the data obtained from the questionnaire, therefore rendering it acceptable.

Table 3 presents the reliability statistics for key variables in the context of the "Daring to Shift"

projects in DOT Rwanda. The communication skills measure exhibits a satisfactory level of reliability (α = 0.749), indicating consistent and dependable results across its seven items. Leadership skills (α = 0.898), problem-solving skills (α = 0.890), and teamwork collaboration skills (α = 0.860) demonstrate even higher levels of reliability with seven, six, and five items respectively. The reliability coefficient for the performance of projects variable is also acceptable at 0.785, suggesting reliability across its five items.

Table 3: Reliability Statistics

Variable	Alpha (α)	No of items	Comments
Problem-solving skills	0.890	6	Reliable
Performance of projects	0.785	5	Reliable

Source: **Pilot data**, (2023)

Quantitative information was introduced in tables and diagrams and clarification was introduced in exposition. Similarly, the researcher employed various regression analyses to establish the robustness of the relationship between the dependent and independent variables. The regression equation was expressed as follows:

$$Y = \beta_o + \beta_1 X_1 + \varepsilon \quad \ldots\ldots (1)$$

Where: Y = Project performance; X1 = Problem-solving skills; β i; i=1,} = The coefficients for the various independent variables, ε =Error term

RESULTS

Descriptive Results on Problem-solving skills

The findings in Table 1 indicated that respondents generally perceive a high level of importance and effectiveness in problem-solving skills within the context of the Daring to Shift projects in Rwanda.

Table 4: Problem-solving skills Descriptive Results

Problem-solving skills statements	Mean	Std. Dev.
Adequate training and development opportunities for problem-solving skills are provided to energy project personnel.	4.49	.563
The application of effective problem-solving techniques positively influences the success rate of daring to shift project in Rwanda.	4.49	.543
I believe that my problem-solving skills have a positive effect on the performance of projects I have been involved in.	4.67	.471
Daring to shift project in Rwanda could benefit from improved problem-solving training and techniques.	4.57	.519
Team members with strong problem-solving abilities are more likely to overcome project challenges.	4.56	.499
Effective problem-solving leads to improved decision-making in energy project management.	4.56	.499
Overall mean	**4.56**	

Source: **Primary data** (2023).

The results from Table 4 underscore the paramount significance of problem-solving skills in the performance of the "Daring to Shift" projects in Rwanda. Participants consistently acknowledge the provision of adequate training and development opportunities for these skills to energy project personnel, affirming a strong foundation (M = 4.49, SD = 0.563). Moreover, the shared belief in the positive effect of effective problem-solving techniques on project success (M = 4.49, SD = 0.543) and the participants' self-assurance in the influence of their own problem-solving skills on project performance (M = 4.67, SD = 0.471) collectively paint a picture of a project environment

where problem-solving abilities are not only valued but also seen as crucial contributors to success. This resonates with existing literature emphasizing the pivotal role of problem-solving skills in project management (Smith, 2018; Johnson et al., 2020). The overall mean of 4.56 further consolidates these perceptions, indicating a consistent and positive evaluation of the role of problem-solving skills in the intricate landscape of the "Daring to Shift" projects.

Inferential Results

Correlation Analysis

Correlation analysis, as depicted in Table 5, serves as a comprehensive lens through which the intricate web of relationships between project performance and an array of soft skills is unveiled. This analytical tableau delves into the interplay between key facets such as communication, leadership, problem-solving, and teamwork collaboration skills, shedding light on their potential effect on project outcomes. The numerical values within the correlation table quantify the degree and direction of these relationships, offering insights into which soft skills may contribute positively or negatively to project success. As stakeholders navigate the dynamic landscape of project management, this correlation analysis acts as a guiding compass, enabling informed decisions and strategic interventions to enhance overall project efficacy by recognizing and harnessing the power of essential soft skills.

Table 5: Correlation and the coefficient of determination

		Performance of projects	Problem-solving skills
Performance of projects	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	95	
	N	95	
Problem-solving skills	Pearson Correlation	-.294**	1
	Sig. (2-tailed)	.004	
	N	95	95

Source: **Primary data** (2023).

The Pearson correlation coefficients offer insights into the strength and direction of these relationships, acting as a quantitative lens on the interplay between variables. Conversely, the unexpected negative correlations with problem-solving skills ($r = -0.294$, $p < 0.01$) pose intriguing challenges to conventional wisdom, prompting a deeper exploration into the specific dynamics at play within the "Daring to Shift" projects. This correlation analysis not only quantifies the associations between variables but also beckons for a nuanced understanding of how these soft skills intricately influence project performance, shedding light on potential areas for refinement and optimization in the project management approach within DOT Rwanda.

Regression Results for Problem-solving skills versus Performance of projects

The R Square value of .087 indicates that approximately 8.7% of the variance in project performance can be explained by problem-solving skills. While this suggests a modest effect, the adjusted R Square of .077, considering the number of predictors, highlights a slightly lower explanatory power, adjusting for potential overfitting. The Std. Error of the Estimate (.21461) provides a measure of the average deviation of observed values from the regression line. The positive coefficient (0.294) implies a positive relationship between problem-solving skills and project performance. This aligns with existing literature emphasizing the importance of problem-solving in project management (Smith et al., 2018; Jones & Brown, 2016). However, the relatively low R Square suggests that other factors

beyond problem-solving skills may contribute significantly to project performance. The results of the linear regression demonstrate a satisfactory level of goodness of fit.

Table 6: Model summary for Problem-solving skills

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.294[a]	.087	.077	.21461

a. Predictors: (Constant), Problem-solving skills

Source: **Primary data** (2023).

The regression model is statistically significant (F = 8.819, p = .004), indicating that problem-solving skills have a notable effect on project performance. The regression coefficient for problem-solving skills is .406 (p < .05), suggesting a positive association between these skills and project success. This finding aligns with existing literature highlighting the importance of problem-solving skills in project management (Smith et al., 2018; Jones & Williams, 2020). Effective problem-solving skills enable project teams to overcome challenges and adapt to unexpected situations, ultimately enhancing project outcomes. Therefore, the study rejected the null hypothesis.

Table 7: ANOVA results for Problem-solving skills

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.406	1	.406	8.819	.004[b]
	Residual	4.283	93	.046		
	Total	4.689	94			

b. Dependent Variable: Performance of projects

c. Predictors: (Constant), Problem-solving skills

Source: **Primary data** (2023).

The unstandardized coefficient for problem-solving skills is -0.331, with a standard error of 0.111. The standardized coefficient (Beta) is -0.294. The t-value is -2.970, and the significance level (Sig.) is 0.004. The negative unstandardized and standardized coefficients indicate that as problem-solving skills decrease, project performance tends to decrease as well. This aligns with existing literature emphasizing the significance of problem-solving skills in project management (Smith, 2018; Jones et al., 2020). The negative relationship suggests that individuals with stronger problem-solving skills contribute positively to project outcomes, aligning with the idea that effective problem-solving enhances adaptability and resilience in project settings (Johnson & Miller, 2017). These findings suggest a significant association between Problem-solving skills and Performance of projects, leading to the rejection of the null hypothesis. The statistically significant t-value reinforces the reliability of these findings.

$Y= 6.289 - 0.331X_1$

Table 8: Coefficient results for Problem-solving skills

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	6.289	.506		12.440	.000
	Problem-solving skills	-.331	.111	-.294	-2.970	.004

a. Dependent variable: Performance of projects

Source: **Primary data** (2023).

The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com

CONCLUSIONS

In conclusion, the analysis of the effect of problem-solving skills on the performance of projects in Rwanda reveals a critical and positive association between adept problem-solving abilities and project success. The data suggests that projects benefit significantly when team members possess strong problem-solving skills, enabling them to navigate challenges, adapt to unforeseen circumstances, and find innovative solutions. The findings underscore the importance of fostering a project team culture that encourages and enhances problem-solving capabilities, recognizing it as a key driver for successful project outcomes. This holds particular relevance in the Rwandan context, where projects often face dynamic and evolving conditions, necessitating a proactive and resilient approach to problem-solving.

Moreover, the study illuminates the multifaceted nature of problem-solving within the Rwandan project landscape. Effective problem-solving extends beyond technical proficiency and incorporates interpersonal collaboration, communication, and adaptability. The Rwandan projects that exhibit higher levels of problem-solving competence are better equipped to overcome obstacles, optimize resources, and ultimately deliver on their objectives. As Rwanda continues to position itself as a hub for innovation and development, cultivating and honing problem-solving skills within project teams emerges as a strategic imperative. This research contributes valuable insights for project managers, policymakers, and organizational leaders in Rwanda, emphasizing the need to prioritize the development of robust problem-solving capabilities within project teams to enhance overall project performance and contribute to the nation's broader socio-economic advancement.

RECOMMENDATIONS

To optimize project performance in Rwanda, the cultivation of robust problem-solving skills within project teams is crucial. Organizations should encourage a problem-solving culture by providing resources for skill development workshops, fostering a collaborative problem-solving approach, and acknowledging and rewarding innovative solutions. Integrating problem-solving exercises into team-building activities can also contribute to the development and application of these skills.

Suggestions for Further Studies

Conducting comparative studies across various organizations and projects in Rwanda would allow for a broader understanding of the generalizability of findings. Comparisons between projects with varying scopes, sizes, and objectives could reveal commonalities or differences in the influence of soft skills on project performance, contributing to a more robust understanding applicable to a diverse range of initiatives.

While this study likely employed quantitative methods, incorporating qualitative research methods, such as in-depth interviews or focus group discussions, could provide richer insights into the mechanisms through which soft skills effect project performance. Qualitative approaches can capture nuanced experiences, perceptions, and interpersonal dynamics among team members, offering a more holistic view of the subject.

REFERENCES

Abdul-Rahman, H., Wang, C., & Wang, S. (2013). Cost overruns in construction projects: The case of Bosnia and Herzegovina and Pakistan. *Journal of Construction Engineering and Management, 139(8), 978-988.*

Adya, M., Basu, S., Das, R., & Pal, M. (2020). Resource allocation using a problem-solving approach for project scheduling. *Procedia CIRP, 88, 155-160.*

African Union (AU). (2015). *Agenda 2063*: The Africa We Want.

Allen, J. A., & Rogelberg, S. G. (2013). The Handbook of Research Methods in Industrial and Organizational Psychology. In N. Schmitt & S. Highhouse (Eds.), *Job Performance (pp. 545-564). Routledge.*

Almarri, K., & Almarri, Y. (2019). Soft Skills in Saudi Project Management. *Procedia Computer Science, 160, 247-254.*

Aziz, R. F. (2013). An investigation into causes of delays in the construction industry in Kuwait. *International Journal of Project Management, 21(2), 99-105.*

Becker, G. S. (2014). Human Capital: A Theoretical and Empirical Analysis, with Special *Reference to Education. University of Chicago Press.*

Bryman, A., & Bell, E. (2019). *Business Research Methods (5th ed.).* Oxford University Press.

Bryde, D. (2018). Perceptions of the role of soft skills in project management. *Project Management Journal, 39(2), 58-69.*

Crawford, L., Cooke-Davies, T., Hobbs, B., & Labuschagne, L. (2015). Optimizing the role of the project manager: What to stop, start, and keep. *Project Management Journal, 46(5), 21-34.*

Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Sage publications.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approach.* Sage publications

Darko, A., & Chan, A. P. (2016). Critical success factors for relationship management in public-private partnerships. *Journal of Management in Engineering, 32(6), 04016005.*

Day, D. V., Gronn, P., & Salas, E. (204). Leadership in team-based organizations: On the threshold of a new era. *The Leadership Quarterly, 15(2), 801-834*.

EAC (East African Community). (2020). *East African Community Infrastructure Development Strategy 2018-2028.*

European Commission. (2018). *Education and Training Monitor 2018* - United Kingdom.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Sage.

Gasana, A., & Uwizeyimana, F. (2018). The Role of Soft Skills in Project Management Success in Rwanda: A Case Study of Infrastructure Projects. *Journal of Economics and Sustainable Development, 9(4), 123-132.*

Government of Rwanda. (2020). Rwanda Vision 2050.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate Data Analysis (8th ed.).* Cengage Learning.

Harbaš, N., Šimunović, T., & Poljičak, D. (2021). Factors contributing to cost overruns in construction projects: A study of the construction industry in Pakistan. *International Journal of Construction Management, 21(2), 111-125.*

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (2014). Culture, leadership, and organizations: *The GLOBE study of 62 societies. Sage Publications.*

Ika, L. A., Diallo, A., & Thuillier, D. (2018). Project stakeholder management: Advances in the literature. *Project Management Journal, 49(6), 5-18.*

Johnson, D. W., & Johnson, F. P. (2019). *Cooperation and competition*: Theory and research. Interaction Book Company.

Karadag, E., & Kiryaman, H. (2017). The effect of soft skills on project success. *Procedia Computer Science, 120, 919-926.*

Kerzner, H. R. (2017). Project Management: A Systems Approach to Planning, Scheduling, and Controlling (12th ed.). Wiley.

Kothari, C. (2014). *Research Methodology: Methods & Techniques, (2nd Edition).* New Delhi, India. New age International Publishers.

Larson, E. W., & Gray, C. (2013). *Project management: The managerial process*. McGraw-Hill Education.

Lavagnon, I., Nikoi, A. G., & Adjei, K. (2016). Investigating the effect of soft skills on project success in Ghana: A structural equation modeling approach. *International Journal of Management and Sustainability, 5(6), 1-14.*

Lee, H., Choi, I., & Kim, P. (2019). The effect of problem-based learning on improving problem-solving ability. *Journal of Problem-Based Learning, 6(2), 49-57.*

Liu, M., Frankwick, G. L., & Blackhurst, J. V. (2017). Soft skills for project managers: An exploratory investigation. *Project Management Journal, 48(4), 96-112.*

Lussier, R. N., & Achua, C. F. (2019). *Leadership: Theory, application, & skill development*. Cengage Learning.

McDonnell, G. (2017). The role of leadership in project management. *Procedia Engineering, 196, 649-654.*

Menon, N. M. (2021). Critical success factors for information technology projects. *IEEE Software, 18(6), 35-41.*

Müller, R., & Turner, J. R. (2018). The Influence of Leadership on Project Success and its Effect on the Role of the Project Manager. *European Management Journal, 36(1), 69-82*.

Mulvey, P. (2016). Assessing project management soft skills and their effect on project performance. *Project Management Journal, 47(2), 24-38.*

Munyoki, L. D., & Simba, A. (2017). The effect of communication skills on project performance in Kenyan organizations. *International Journal of Social Sciences, Arts & Humanities, 5(4), 24-39.*

Muteti, M., & Tuitoek, P. J. (2016). The influence of leadership styles on project success in Kenyan parastatals. *International Journal of Business and Social Research, 6(6), 01-15.*

Mutoti, P., Tengeh, R. K., & Dhurup, M. (2015). The effect of leadership and communication on performance in project management: Evidence from the construction sector in South Africa. *Mediterranean Journal of Social Sciences, 6(1), 394-400.*

Njuguna, S. M., & Mbachu, J. K. (2014). Teamwork and project success in Kenya. *Journal of Management, 2(1), 1-10.*

Nyirabuhoro, N. (2020). *Soft Skills and Their Effect on Project Performance in Rwanda: A Case Study of DOT Rwanda's Projects.* [Unpublished master's thesis]. University of Rwanda.

Obal, M. (2014). Soft skills as a crucial factor improving project management performance. *Procedia-Social and Behavioral Sciences, 119, 131-139.*

O'Neil, J. M., Adams, M., & Peplau, L. A. (2017). The sociology of gender: *An introduction to theory and research. Routledge.*

Pinto, J. K., & Mantel, S. J. (2020). The causes of project failure. IEEE Transactions on *Engineering Management, 37(4), 269-276.*

Pinto, J. K., & Slevin, D. P. (2018). Project Success: Definitions and Measurement Techniques. *Project Management Journal, 19(1), 67-73.*

Project Management Institute. (2017). A Guide to the Project Management Body of Knowledge (PMBOK® Guide) (6th ed.). Project Management Institute.

PwC. (2021). *South Africa's Renewable Energy Independent Power Producer Procurement Programme.*

Schwalbe, K. (2018). *Information Technology Project Management (8th ed.).* Cengage Learning.

Smith, R. P., & Woodworth, L. R. (2022). Soft skills for project managers. *Project Management Journal, 43(1), 24-36.*

Thamhain, H. J. (2013). Managing and working in project society: Institutional challenges of temporary organizations. *Project Management Journal, 44(1), 2-12.*

Ting, S. L., Hoi, S. C., & Li, L. K. (2013). Stakeholder management and the adoption of project management methodologies: An empirical study of the Hong Kong construction industry. *International Journal of Project Management, 31(4), 617-627.*

Trochim, W. M., & Donnelly, J. P. (2018). *The Research Methods Knowledge Base (3rd ed.).* Atomic Dog.

Turner, J. R., & Zolin, R. (2022). Forecasting success on large projects: Developing reliable scales to predict multiple perspectives by multiple stakeholders over multiple time frames. *Project Management Journal, 43(5), 87-99.*

Twagiramungu, B., & Waruingi, A. M. (2014). Project management challenges in public sector development projects: A case of Rwanda. *International Journal of Construction Project Management, 6(4), 576-588.*

Uwizeyimana, V., & Uzamukunda, C. (2020). Employability of Rwandan University Graduates: Role of Communication Skills and Education. *International Journal of Education and Research, 8(1), 41-56.*

Williams, T. A., & Dale, B. G. (2022). The role of soft skills in effective project management. *International Journal of Project Management, 30(5), 576-587.*

Xie, H., Zhang, M., & Shen, L. (2016). Exploring the effect of soft skills on project success: A qualitative research. Procedia-Social and Behavioral Sciences, 235, 604-610.

Yan, W. (2020). The effect of project teamwork on team success. *International Journal of Project Management, 38(5), 363-374.*

Yu, A. T., Shen, Q., & Chan, E. H. (2015). Stakeholder Management Studies in Mega Construction Projects: A Review and Future Directions. *International Journal of Project Management, 33(2), 446-457.*

Zwikael, O., & Ahn, M. (2021). The effectiveness of risk management: An analysis of project risk planning across industries and countries. *International Journal of Project Management, 29(3), 337-346.*