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The Influence of Non-Recourse Project Financing on the Success of Macye Macye Project in Rwanda

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Abstract: This study investigates how non-recourse project financing influences the success of the Macye Macye project in Rwanda, a digital inclusion initiative aimed at making smartphones more affordable. It explores four key aspects of project financing: project risk profiling, risk transfer, financing contracting, and capital cost. The findings show that all these factors significantly affect the project's success, with project capital cost having the greatest impact, followed by project financing contracting and project risk profiling. Statistically, all variables had a significant effect on the success of the project, with p-values below 0.05. The regression analysis indicated that increasing project risk profiling, risk transfer, financing contracting, and capital cost all positively influenced the project's success by 36.6%, 19.8%, 38%, and 51.7%, respectively. Additionally, the study observed that tolerance and variance inflation factor (VIF) tests confirmed minimal multicollinearity among the variables. The study further suggests enhancing risk identification through structured workshops and ongoing risk register updates, expanding risk transfer agreements, improving contract clarity, and establishing regular cost audits. Stakeholder involvement in capital planning and financial transparency were also recommended to optimize project performance. Although the project successfully leveraged non-recourse financing, challenges in fully identifying risks and communicating objectives remain. Continuous monitoring and stronger enforcement of risk management practices are necessary for future success. Ultimately, non-recourse project financing plays a crucial role in determining the success of large-scale initiatives like the Macye Macye project.

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I. INTRODUCTION

This study explores the impact of non-recourse project financing on the success of the Macye Macye project in Rwanda, a digital inclusion initiative aimed at improving smartphone affordability. The research focuses on four critical aspects of non-recourse financing: project risk profiling, risk transfer, financing contracting, and capital cost, and how these factors contribute to project success.

The study reveals that all these variables have a significant impact on project success, with project capital cost having the greatest influence. Statistical analysis shows that increasing the use of these financing elements positively affects project outcomes. Despite the overall positive impact, the study also highlights areas for improvement, such as strengthening risk identification and mitigation processes, improving contract clarity, and enhancing financial monitoring practices. Ultimately, the findings underscore the importance of effective non-recourse financing strategies in driving the success of large-scale projects like Macye Macye.

- *Statement of the Problem*

Many people in Rwanda are on the other side of a digital divide, divided not by a lack of desire or aptitude but rather by the straightforward but crucial obstacle of smartphone cost, even as the rest of the globe rushes ahead with 5G and smart cities. Fortunately, the UN is concerned about this apparent disparity between those who have access to modern ICT tools and those who do not, as evidenced by UNSDG 9, which emphasizes the need to provide universal and affordable internet access in least developed nations by 2030! Additionally, the same concern is expressed in their SDG 10 which states that the digital divide contributes to inequality between and within countries emphasizing the need to democratize access to technology. (Amogelang Maluleka, 2023)

In recent years, access to mobile technology has become increasingly critical for driving economic growth and promoting social inclusion, particularly in developing countries. According to the 2022 census, only 1,126,276 Rwandans possessed smartphones, Minister of ICT and

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Innovation, Paula Ingabire, acknowledged this challenge, citing the same reason of high cost of smartphones as barrier to widespread adoption. The National Broadband Policy and Strategy, which seeks to increase access to affordable and high-quality broadband services by encouraging private sector cooperation to implement strategic policy directions like smartphone affordability as its policy direction number 1 with a target of 85% of smart devices in the adult population, has thus been hampered by the low adoption of smartphones. The parties responsible are the Ministry of ICT, RISA, RURA, and the private sector. (Ministry of ICT and Innovation, 2022)

The MTN Macye Macye project in Rwanda, which aims to provide affordable financing options for smartphones, has the potential to bridge the digital divide and enhance digital connectivity among underserved populations (World Bank, 2020). However, the success of such initiatives is intricately linked to the availability, structure, and management of project financing. According to earlier studies, well-structured funding is necessary for digital inclusion initiatives to be implemented successfully and scale (United Nations, 2021). Despite the strategic importance of the Macye Macye project, there is limited empirical evidence on how non-recourse project financing structure influence project success, particularly in terms of achieving key success indicators such as affordability for end-users, and long-term sustainability.

Therefore, by examining the connection between the non-recourse project financing structure and the MTN Macye Macye project in Rwanda, this study aims to close this gap. The study specifically examined whether the project's tactics were sufficient and well managed, with a focus on the project's potential to increase smartphone use and penetration among adults by making smartphones more affordable (Ministry of ICT and Innovation, 2022). It is crucial to comprehend how non-recourse finance affects project success in order to guide future financing approaches that might aid in attempts to make smartphones more affordable in Rwanda and other comparable developing nations (ITU, 2020).

II. LITERATURE REVIEW

This chapter critically evaluates the existing literature on non-recourse project financing and its impact on the success of the Macye Macye project in Rwanda. It incorporates conceptual perspectives, theoretical foundations, and empirical evidence, outlining essential variables such as project risk transfer, capital cost, contracting, and risk profiling while identifying research gaps.

➢ *Conceptual Review*

- *Non-Recourse Project Financing*

Non-recourse project financing is a financial structure where lenders rely solely on a project's cash flow and assets for repayment, rather than the sponsor's creditworthiness (Hayes, 2019). This model is particularly relevant for large-scale infrastructure projects as it allows off-balance-sheet financing, thereby limiting financial liability for sponsors. It typically involves the formation of a Special Purpose Vehicle (SPV) to isolate financial and operational risks. Key stakeholders include sponsors, debt and equity providers, and contractual partners, all governed by a robust network of financial and legal agreements (Williams et al., 2019; Paun, 2019). Instruments such as offtake and supply agreements help secure future cash flows, while risk management mechanisms like hedging and insurance ensure project viability.

- *Project Risk Profiling*

A project risk profile involves identifying and assessing risks that may impact the timeline, cost, and overall success of a project (Wright & Gardner, 2019). The process includes risk identification, analysis, documentation, response planning, and ongoing monitoring. Both internal and external risks—ranging from resource shortages to regulatory changes—are considered. Tools such as SWOT analysis, Monte Carlo simulations, and risk registers are essential in this process (PMI, 2017). An effective risk profile supports lenders and sponsors in allocating resources and developing contingency strategies.

- *Project Financing Risk Transfer*

Risk transfer is central to project financing and involves allocating risks to parties most capable of managing them. Through mechanisms like DBFM and BOT contracts, risks such as construction delays or demand fluctuations are assigned accordingly to public or private stakeholders (Brealey et al., 2017). Studies stress that balanced risk allocation through legal frameworks enhances trust and sustainability (Rasheed et al., 2022). Recent trends include insurance schemes and availability-based payment models to mitigate residual risks effectively.

- *Project Financing Contracting*

Contracts in non-recourse financing are designed to manage complex risk allocations. Key contracts include the Project Finance Agreement (PFA), Shareholder Agreements, Construction and Supply Contracts, and Off-take Agreements (Williams et al., 2019). These contracts delineate financial obligations, revenue structures, and timelines, ensuring stakeholder alignment and risk minimization. The success of such contracts lies in their ability to facilitate collaboration while allowing sufficient flexibility for renegotiation when required.

- *Project Capital Cost*

Capital cost management is vital for financial sustainability in non-recourse financing. These costs cover construction, permits, and working capital, and influence the amount of debt a project can secure (Hoffman, 2007; Diab, 2020). Lenders demand conservative cost estimates due to the high risk associated with sole reliance on project assets for repayment. Effective cost containment and accurate projections enhance investor confidence and reduce refinancing risks (Santos & Vieira, 2020). The balance between debt and equity, and mechanisms for managing overruns, are essential for project success.

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- *Macye Macye Project Success*

Project success is measured by the achievement of SMART goals and long-term stakeholder value (Turner, 2016; Kerzner, 2017). Sustainability, efficiency, and alignment with project scope are key indicators. In the context of Macye Macye, success extends beyond infrastructure completion to societal and environmental impact (Müller et al., 2017). Integrating renewable technologies and promoting efficient design contribute to enduring project value.

➢ *Theoretical Review*

- *Risk Allocation Theory*

This theory emphasizes the optimal distribution of project risks among stakeholders. In non-recourse financing, it supports assigning construction and market risks to parties best suited to handle them, enhancing project resilience (Diab, 2020; Liu et al., 2020). Instruments like insurance, performance bonds, and offtake agreements are used to reduce exposure. Proper application ensures project completion and builds stakeholder trust, as evidenced in the Macye Macye initiative.

- *Cost-Contingency Theory*

This theory underscores the importance of budgeting for unforeseen costs during project execution. It promotes financial stability through contingency reserves based on risk analysis and past experiences (Santos & Vieira, 2020; Ortiz & Pellicer, 2020). Especially relevant for managing capital costs, it helps in avoiding overruns and maintaining funding integrity throughout the project lifecycle.

- *Incomplete Contracts Theory*

Developed by Hart and Holmström, this theory addresses the inherent limitations of contracts in accounting for all possible project contingencies. In non-recourse financing, especially in PPPs, it highlights the need for flexible contracts that allow for renegotiation and adaptation to changing conditions (Iossa & Saussier, 2019). Governance structures and control rights are central to managing contractual gaps, ensuring continuity despite uncertainties.

➢ *Empirical Review*

- *Risk Profiling and Project Success*

Evidence shows that comprehensive risk profiling significantly correlates with project success in terms of cost, time, and stakeholder satisfaction (Rahman et al., 2023). However, some studies caution against overreliance on risk planning, noting it may reduce innovation or be subjective (Ahmed et al., 2021; Smith et al., 2020). Alignment of risk strategies with project complexity is essential for optimal outcomes.

- *Risk Transfer and Project Success*

Empirical studies confirm that risk transfer improves project execution by freeing sponsors to focus on delivery (Müller & Turner, 2017; De Magalhães et al., 2019). PPP models, in particular, benefit from this approach through efficiency and stakeholder clarity. However, poor allocation can lead to disputes, underperformance, and failure (Feng & Chan, 2019).

- *Contracting and Project Success*

Effective contracts clarify roles and distribute risk equitably, which is vital for project timelines and performance (Williams et al., 2019; Santos & Vieira, 2020). Nevertheless, over-complexity or misaligned incentives can hinder adaptability and escalate transaction costs. The success of Macye Macye hinges on robust, transparent contracting with service providers and suppliers.

- *Capital Cost and Project Success*

Strong capital cost management contributes significantly to success through efficient resource allocation and financial stability (González-Ruiz et al., 2022). Yet, some scholars argue that success also depends on qualitative factors like leadership and communication (Abdul-Rahman et al., 2018). Thus, while essential, capital cost control should be part of a broader project management strategy.

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III. CONCEPTUAL FRAMEWORK

Below is a visual representation of the relationship between independent and dependent variables.

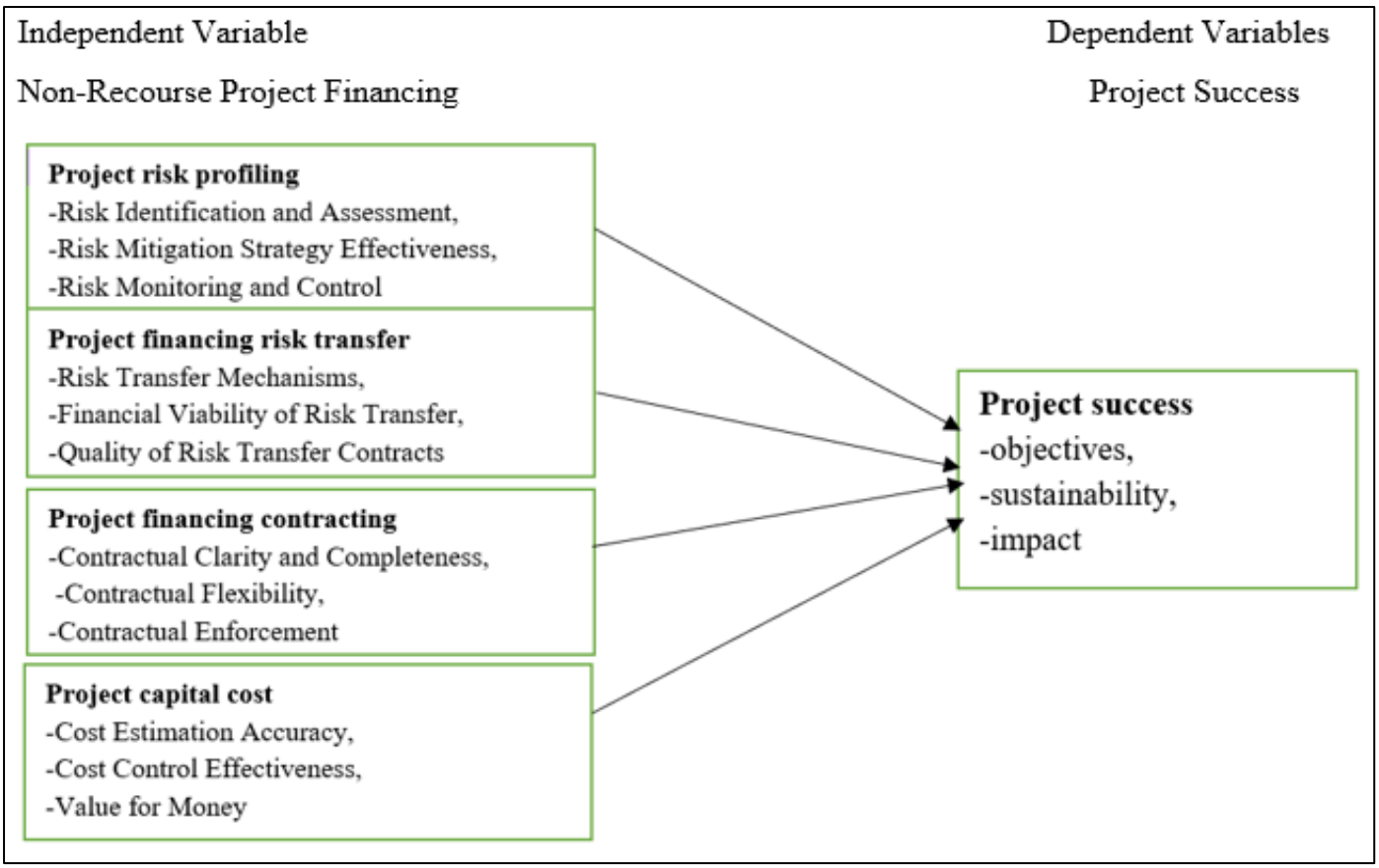

Fig 1 Conceptual Framework
(Source: Researcher, 2025)

The conceptual framework of this research is comprised of independent variables which are project risk profiling, project financing risk transfer, project financing contracting and project capital cost. It also presents the dependent variable which is project success by objectives, sustainability and impact.

➢ *Research Gap*

Although existing literature underscores the importance of insurance in mitigating project risks, there is limited understanding of the economic burden that high insurance premiums impose on large-scale initiatives and how this affects their long-term sustainability. While sustainability is widely accepted as a key metric of project success, empirical studies rarely connect it directly with elements of non-recourse financing such as risk profiling, risk transfer, contracting, and capital cost. Moreover, although sophisticated risk assessment models have emerged, their application remains limited in micro-lending and device-financing contexts, particularly for underserved populations. Traditional risk models often fail to account for evolving project dynamics and exclude inclusive, adaptable approaches. Much of the current research is concentrated on infrastructure and energy projects in developed markets, with a significant gap in literature concerning non-recourse financing for device-based projects in developing countries like Rwanda. The unique challenges in Rwanda—such as limited financial literacy, outdated technological systems, weak KYC processes, lack of credit history, and unstable regulatory environments—further question the applicability of existing frameworks. This study addresses these gaps by evaluating how non-recourse project financing variables influence the success of the Macye Macye project in Rwanda.

IV. RESEARCH DESIGN AND STUDY POPULATION

➢ *Research Design*

The research methodology for this study follows a **quantitative approach** aimed at analyzing the influence of **non-recourse project financing** on the success of the Macye Macye project. A **correlational research design** is employed, allowing the researcher to assess the strength and direction of relationships between various independent variables (such as project risk profiling, project financing risk transfer, project financing contracting, and project capital cost) and the dependent variable, which is project success (measured by objectives, sustainability, and impact). This design facilitates a comprehensive understanding of the interrelations between financing structures and project outcomes.

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Descriptive statistics are used to summarize the data and present key findings in a digestible format. In contrast, **inferential statistics**, including **correlation** and **regression analysis**, are utilized to determine the relationships between the independent and dependent variables. By examining these relationships, the study aims to identify key determinants that significantly influence project success. Regression analysis, in particular, is essential in evaluating the predictive power of the independent variables, offering evidence-based recommendations for improving financing models in future digital projects.

This study adheres to a well-structured research design to ensure the reliability and validity of the findings. According to Creswell (2014), the validity of the research design is crucial for addressing the research questions effectively and providing a systematic approach to data collection, analysis, and interpretation. The study design also ensures that potential biases are minimized, and the research problem is tackled through a robust methodological framework.

➢ *Study Population*

The study population consists of all individuals and organizations involved in the Macye Macye project, totaling 100 participants. These participants include **MTNR PLC** as the project sponsor team, **Special Purpose Vehicle (SPV)** project team members (comprising staff from **Samphone** and **Intelligra**), and **Bank of Kigali**, who acts as both the lender and insurer for the project. The population is relatively small and manageable, allowing for a **census approach**, where data is collected from every unit in the population. This eliminates the need for sampling and ensures comprehensive data collection.

The census approach is particularly beneficial when the study population is limited in size, as it provides more accurate and reliable results by including all relevant participants. This method minimizes potential sampling biases and strengthens the study's generalizability within the context of the Macye Macye project. The study also utilizes **primary data**, gathered directly from the participants using structured questionnaires. Primary data is particularly valuable as it provides fresh, context-specific insights directly related to the research objectives.

➢ *Data Collection Instruments and Validity*

- *Data Collection Instruments*

The primary data collection tool for this study is a structured questionnaire designed to gather data on project financing and success. The questionnaire consists of three sections: demographics, project financing components, and project success perceptions, with the latter two using a Likert scale to measure attitudes and opinions. This standardized approach ensures consistency across responses and allows for statistical analysis. Likert scales help capture nuanced views on complex topics like financing structures and project success, as highlighted by Malakar (2022). To ensure quality, validity was assessed using the Content Validity Index (CVI), confirming the instrument covers all relevant aspects. Reliability was tested with Cronbach's alpha, yielding a high value of 0.986, indicating strong internal consistency. A pilot study was conducted with participants from MTN Rwanda and Macye Macye employees, helping identify and address any issues with the questionnaire before the full study. This process ensured the reliability and validity of the research instrument, enhancing the credibility of the findings.

➢ *Data Processing, Analysis, and Ethical Considerations*

- *Data Processing*

Once the data is collected, it undergoes a series of processing steps to prepare it for analysis. **Data processing** involves editing, coding, classification, and tabulation to ensure that the data is clean, organized, and ready for statistical analysis. **Editing** involves checking for completeness, consistency, and accuracy, eliminating any errors or inconsistencies that may have been introduced during data collection. **Coding** assigns numerical or symbolic codes to responses, making it easier to enter and analyze the data. **Classification** involves organizing the data into meaningful categories, while **tabulation** presents the data in tables or charts to summarize the findings and make them easier to interpret.

For this study, the processed data was analyzed using the **Statistical Package for Social Sciences (SPSS)**, a widely used software for data analysis. SPSS allows for efficient handling of large datasets, making it an ideal tool for conducting descriptive and inferential statistical analyses. **Descriptive statistics** (such as means and standard deviations) provide a summary of the central tendencies and variability within the data. **Inferential statistics**, including **correlation analysis** and **regression models**, are used to test hypotheses and evaluate relationships between the independent and dependent variables.

- *Data Analysis*

The **descriptive statistics** portion of the analysis focuses on summarizing key characteristics of the dataset. Measures such as the **mean** and **standard deviation** help describe the central tendency and spread of the data, respectively. The mean provides an average value for each variable, while the standard deviation shows the degree of variability or dispersion around the mean.

The **inferential statistics** portion of the analysis seeks to determine whether relationships exist between the study variables. **Correlation analysis** helps assess the strength and direction of associations between variables, while **regression analysis** is used to predict the impact of independent variables (such as project financing risk transfer, capital costs, and risk profiling) on project success. A multiple regression model is employed, where the dependent variable (project success) is predicted based on several independent variables.

- *Ethical Considerations*

Ethics play a crucial role in research, ensuring that the rights and well-being of participants are respected throughout the study. In this research, **ethical considerations** include

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ensuring **voluntary participation**, obtaining **informed consent**, maintaining **anonymity and confidentiality**, and minimizing **potential harm** to participants. The researcher also adhered to the **University of Kigali's research guidelines** for postgraduate programs. Ethical research practices help maintain the integrity of the study and ensure that the findings are credible and trustworthy.

V. DATA ANALYSIS, INTERPRETATION AND DISCUSSION

This chapter presents the research findings which are also discussed in line to the specific objectives that guided this study. The main data collection tool was questionnaire.

➢ *Response Rate*

Table 1 Response Rate

Sampled	Frequency	Response Rate (%)
100	100	100%

Source: (Researcher, 2025)

From a population of 100, all responded to the study. As a result, the response rate was 100%. This was considered sufficient for data analysis.

➢ *Demographic Respondent's Profile*

This section gives detailed information about the profile of respondents who participated in this study in terms of gender and work experience.

Table 2 Demographics profile of respondents

Gender		Frequency	Percentage
Valid	Male	74	74%
	Female	26	26%
Work experience			
Valid	Less than 5 years	42	42%
	Between 6 and 10years	53	53%
	Above 11 years	5	5%
Total		100	100%

Source: (Researcher, 2025)

Table 2 indicates that most of the respondents; 74 in number were male and they were represented by 74% whereas 26 respondents were female and represented by 26%. Furthermore, 42 respondents representing 42% had a working experience period of less than 5 years of experience, the majority of 53 respondents represented by 53% fell under the category of those whose experience was between the period of 6 to 10 years, and lastly 5 respondents represented by 5% have an experience of 11 years and above.

➢ *Descriptive Statistics*

Below section presents the findings regarding specific objectives.

- *Influence of Project Risk Profiling on the Success of Macye Macye Project in Rwanda*

Wright and Gardner (2019) suggest that Project Risk profiling is a structured process of identifying, analyzing, and documenting potential risks that could impact a project's success. It involves creating a comprehensive overview of all possible risks, their potential impact, and the likelihood of them occurring.

Table 3 Respondents views on Influence of Project Risk Profiling on the Success of Macye Macye Project in Rwanda"

Descriptive Statistics			
Statement	N	Mean	Std. Deviation
The project team effectively identified all potential risks at the outset of the project.	100	4.16	.368
The project risks were assessed based on their likelihood and potential impact accurately.	100	4.98	.141
The project had clear and effective risk mitigation strategies in place for identified risks.	100	4.22	.484
The risk mitigation measures were timely implemented during the project	100	4.30	.461
There was ongoing monitoring of risks throughout the project to ensure early detection of any changes.	100	4.51	.502
The project risks were communicated clearly to all stakeholders throughout the project lifecycle	100	4.88	.327
Valid N (listwise)	100		

Source: (Researcher, 2025)

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Table 3 provides valuable insights into the effectiveness of project risk profiling, highlighting the strong performance in several areas. The highest-rated aspect, with a mean score of 4.98, indicates that risks were accurately assessed based on likelihood and potential impact, reflecting agreement among respondents on the quality of the risk assessment process. The second-highest rating, 4.88, suggests effective communication of risks to stakeholders throughout the project, promoting transparency. However, the lowest rating (4.16) suggests some challenges in identifying all potential risks early on. Risk mitigation measures received a moderate rating of 4.30, showing room for improvement in their timeliness, while continuous risk monitoring was seen positively with a score of 4.51. Overall, the findings highlight strengths in risk assessment and communication but point to areas for improvement in risk identification and mitigation.

- *Influence of Project Financing Risk Transfer on the Success of Macye Macye Project in Rwanda*

Gatti (2023) explores the principles of project finance, providing insights into Risk transfer in project financing referring to it as the allocation of specific project risks to the parties best equipped to manage or mitigate them. Effective risk transfer enhances the project's financial viability and attracts stakeholders.

Table 4 Descriptive Statistics on "Influence of Project Financing Risk Transfer on the Success of Macye Macye Project in Rwanda"

Descriptive Statistics			
Statement	N	Mean	Std. Deviation
The risk transfer mechanisms (e.g., insurance, contracts) provided adequate protection against unforeseen risks.	100	4.22	.675
The project risk transfer to third parties was effective in reducing the project's exposure to risks.	100	4.85	.411
How would you rate the cost-effectiveness of the mechanisms used to transfer project risks?	100	4.89	.314
The risk transfer contracts used in the project were clear and comprehensive	100	4.94	.239
The contractual terms in the risk transfer agreements were carefully enforced	100	4.74	.485
The dispute resolution mechanisms were effectively outlined in the risk transfer agreements.	100	4.68	.469
Valid N (listwise)	100		

Source: (Researcher, 2025)

Table 4 presents a descriptive analysis of project financing risk transfer mechanisms, revealing insights into how effectively risks were allocated and managed. The highest-rated aspect, with a mean of 4.94 and the lowest standard deviation of 0.239, pertains to the clarity and comprehensiveness of risk transfer contracts, aligning with Hodge and Greve (2017). The cost-effectiveness of risk transfer mechanisms (mean = 4.89) and the effectiveness of transferring risks to third parties (mean = 4.85) highlight their role in reducing financial burden and project exposure. The enforcement of contractual terms (mean = 4.74) was viewed positively, though enforcement challenges remain, as noted by Flyvbjerg (2009). Dispute resolution mechanisms (mean = 4.68) were seen as effective, and while the protection provided by risk transfer mechanisms (mean = 4.22) was generally positive, variability in opinions (SD = 0.675) suggests some gaps in coverage for unforeseen risks, as highlighted by Bahamid et al. (2022).

- *Influence of Project Financing Contracting on the Success of Macye Macye Project in Rwanda*

Project financing contracts are distinguished by their intricacy and the focus on the cash flow of the project is the main source of repayment. The Project Finance Agreement (PFA), the primary contract between the lenders and the project business that specifies the terms and circumstances of the loan, including interest rates, repayment schedules, and security arrangements, is the first of the important documents in non-recourse project financing (Williams et al., 2019).

Table 5 Descriptive Statistics on "Influence of Project Financing Contracting on the Success of Macye Macye Project in Rwanda."

Descriptive Statistics			
Statement	N	Mean	Std. Deviation
The terms and conditions of the contracts covered all aspect of the project plainly and clearly	100	4.18	.386
The dispute resolution mechanisms were effectively outlined in the contract	100	4.28	.451
The contractual remedies provided in the project contracts were strong and enforceable.	100	4.70	.522
The contract terms were well adaptable to changing circumstances during the project.	100	4.85	.359
The payment schedules and milestones outlined in the contract were reasonable and realistic	100	4.39	.490
Valid N (listwise)	100		

Source: (Researcher, 2025)

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The descriptive statistics in Table 5 highlight how project financing contracts influenced the success of the Macye Macye Project. The highest-rated aspect (mean = 4.85, SD = 0.359) emphasizes the adaptability of contract terms to changing circumstances, aligning with Turner (2016). Similarly, strong contractual remedies (mean = 4.70) and enforceability were seen as crucial for mitigating risks, supporting Pinto (2019). Dispute resolution (mean = 4.28) and payment schedules (mean = 4.39) were generally well-regarded, though there were minor concerns in dispute handling. Overall, the results show that adaptability, enforceability, and financial structuring were key success factors, while clarity and dispute resolution could be improved.

- *Influence of Project Capital Cost on the Success of Macye Macye Project in Rwanda*

Project capital cost refers to the total expenditure incurred in acquiring, developing, and implementing a project, including costs associated with land, equipment, materials, labor, and financing. These costs are typically one-time investments required to establish the project and ensure its operational readiness (Kerzner, 2017).

Table 6 Descriptive Statistics on "Influence of Project Capital Cost on the Success of Macye Macye Project in Rwanda"

Descriptive Statistics			
Statement	N	Mean	Std. Deviation
Stakeholders were actively consulted during the capital cost estimation process.	100	4.37	.485
Contingency allowances were appropriately included in the estimated capital cost.	100	4.23	.423
Regular cost reviews or audits were conducted throughout the project lifecycle.	100	4.06	.239
The project's return on investment (ROI) met or exceeded expectations.	100	4.68	.601
There were no significant variances between estimated and actual capital costs.	100	4.41	.588
Valid N (listwise)	100		

Source: (Researcher, 2025)

The descriptive statistics on project capital cost in the Macye Macye project highlight key financial management insights. The highest-rated item (mean = 4.68, SD = 0.601) indicates that the project's return on investment met or exceeded expectations, reflecting effective use of capital. The lowest-rated item (mean = 4.06, SD = 0.239) points to potential gaps in continuous cost monitoring, suggesting room for improvement in cost audits. Stakeholder consultation during cost estimation (mean = 4.37, SD = 0.485) and contingency allowances (mean = 4.23, SD = 0.423) were positively received, emphasizing transparency and risk management. The project successfully controlled budget variances (mean = 4.41, SD = 0.588), aligning with cost management best practices.

- *Assessment of Project Success of Macye Macye*

Through Macye Macye, a device financing program created to give every Rwandan access to the power of connectivity, MTN Rwanda is rewriting that story in a ground-breaking partnership with the Bank of Kigali. This program's democratization of technology access and reduction of economic inequality make it closely fit with UNSDG 10.

Table 7 Descriptive Statistics on "Assessment of project success of Macye Macye"

Descriptive Statistics			
	N	Mean	Std. Deviation
The original project objectives (smartphone affordability) were clearly defined and communicated to all stakeholders	100	4.13	.338
The smart phone adoption rate in adult population has significantly grown since the launch of this project	100	4.70	.560
The project has delivered sustainable benefits for the organization and community	100	4.18	.386
The project effectively incorporated sustainable practices in terms of social, economic, and environmental impact	100	4.44	.608
The implemented measures reduced the overall risk exposure of the project	100	4.74	.441
You are satisfied with the social and economic impact of the project in relation to its cost	100	4.56	.519
Valid N (listwise)	100		

Source: (Researcher, 2025)

The descriptive statistics reveal that the Macye Macye project has been largely successful, with risk reduction scoring the highest (mean = 4.74, SD = 0.441), showing strong stakeholder agreement on effective risk management. Smartphone adoption also showed significant progress, with a mean of 4.70 (SD = 0.560), indicating successful affordability initiatives. Social and economic impact, measured at 4.56 (SD = 0.519), reflects high satisfaction with the project's cost-effectiveness, aligning with findings on value perception. Sustainability practices received a mean score of 4.44 (SD = 0.608), highlighting strong support for long-term project benefits. While project objectives were clear, communication challenges were noted with a lower

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score of 4.13 (SD = 0.338), suggesting areas for improvement.

➢ *Inferential Statistics*

Inferential statistics assist researchers in testing hypotheses, identifying correlations between variables, and drawing probability-based conclusions. prevalent inferential methodologies encompass hypothesis testing, correlation analysis, regression analysis, and ANOVA. are covered in this section.

Table 8 Correlations

Correlations

		Project success of Macye Macye	Project risk profiling	Project financing risk transfer	Project financing contracting	Project capital cost
Project success of Macye Macye	Pearson Correlation	1	.384**	.210*	.396**	.229*
	Sig. (2-tailed)		<.001	.036	<.001	.022
	N	100	100	100	100	100
Project risk profiling	Pearson Correlation	.384**	1	.121	.282**	-.081
	Sig. (2-tailed)	<.001		.231	.004	.425
	N	100	100	100	100	100
Project financing risk transfer	Pearson Correlation	.210*	.121	1	-.031	.032
	Sig. (2-tailed)	.036	.231		.763	.751
	N	100	100	100	100	100
Project financing contracting	Pearson Correlation	.396**	.282**	-.031	1	-.100
	Sig. (2-tailed)	<.001	.004	.763		.322
	N	100	100	100	100	100
Project capital cost	Pearson Correlation	.229*	-.081	.032	-.100	1
	Sig. (2-tailed)	.022	.425	.751	.322	
	N	100	100	100	100	100

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

*. Correlation is significant at the 0.05 level (2-tailed).

The Pearson's correlation matrix reveals key relationships between project success and non-recourse project financing variables. The strongest correlation ($r = 0.396$, $p < 0.001$) is between project financing contracting and project success, highlighting the importance of well-structured contracts for project success. Project risk profiling also shows a moderate positive correlation ($r = 0.384$, $p < 0.001$), indicating that strong risk management contributes to better project outcomes. Project financing risk transfer and project capital cost show weaker correlations with project success ($r = 0.210$, $p = 0.036$ and $r = 0.229$, $p = 0.022$, respectively), reinforcing that while important, they are secondary to risk management and financial contracting. These findings align with literature emphasizing the significance of financial structuring and risk management in project success.

Table 9 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.591[a]	.349	.322	.331

a. Predictors: (Constant), Project risk profiling, Project financing risk transfer, Project financing contracting, Project capital cost.

The correlation coefficient ($R = 0.591$) indicates a moderate positive relationship between the predictors and project success. R-squared shows that approximately 35% of the variance in project success is explained by the predictors, and the Adjusted R-squared of 32.2% confirms the model's validity. The low standard error (0.331) suggests a good fit of the model to the data.

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Table 10 ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.591	4	1.398	12.755	<.001[b]
	Residual	10.409	95	.110		
	Total	16.000	99			
a. Dependent Variable: Project success of Macye Macye						
b. Predictors: (Constant), Project capital cost, Project financing risk transfer, Project financing contracting, Project risk profiling						

The results from the ANOVA table show that the overall model is statistically significant ($F(4, 95) = 12.755$, $p < .001$), indicating that the predictors (Project capital cost, Project financing risk transfer, Project financing contracting, and Project risk profiling) collectively have a significant impact on the project success of the Macye Macye project. The regression model explains a portion of the variation in project success, with a Sum of Squares for the regression of 5.591. This is a moderate indication that the chosen predictors are meaningful contributors to understanding project success in this context.

Table 11 Coefficients

Coefficients[a]								
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-.418	.245		-1.708	.091		
	Project risk profiling	.366	.112	.286	3.285	.001	.900	1.111
	Project financing risk transfer	.198	.094	.177	2.117	.037	.980	1.021
	Project financing contracting	.380	.095	.348	4.015	<.001	.910	1.098
	Project capital cost	.517	.153	.282	3.380	.001	.986	1.015
a. Dependent Variable: Project success of Macye Macye								

The regression analysis revealed that the Macye Macye project's success was negatively affected by a constant zero in non-recourse project financing (-41.8%), with project capital cost having the greatest effect (51.7%), followed by project financing contracting (38%), project risk profiling (36.6%), and project financing risk transfer (19.8%). All variables were significant at the 5% level ($p<0.05$), with tolerance values close to 1, indicating no problematic multicollinearity, and VIF values between 1 and 5 suggesting moderate multicollinearity. The final regression equation was: $Y = -0.418 + 0.366X1 + 0.198X2 + 0.380X3 + 0.517X4 + \epsilon$. from Table 4.12 indicate that most eigenvalues differ from zero, except for the fifth-dimension predictor. While the condition indices for the first four dimensions show no signs of multicollinearity, the fifth dimension (project capital cost) shows moderate collinearity. However, the collinearity statistics from Table 11, with a tolerance of 0.986 and VIF of 1.015, eliminate concerns of multicollinearity.

Table 12 Collinearity Diagnostics

Collinearity Diagnostics[a]								
				Variance Proportions				
Model	Dimension	Eigenvalue	Condition Index	(Constant)	Project risk profiling	Project financing risk transfer	Project financing contracting	Project capital cost
1	1	4.773	1.000	.00	.00	.00	.00	.00
	2	.096	7.057	.00	.04	.38	.41	.02
	3	.063	8.687	.02	.13	.36	.02	.35
	4	.055	9.337	.00	.72	.16	.45	.00
	5	.014	18.707	.98	.10	.10	.12	.63
a. Dependent Variable: Project success of Macye Macye								

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➢ *The Results*

Table 13 Hypotheses Summary Results

	P-value	Decision
H_{01}: There is no significant influence between project risk profiling on success of macye macye project in Rwanda.	.001	Rejected
H_{02}: There is no significant influence between project financing risk transfer on success of macye macye project in Rwanda.	.037	Rejected
H_{03}: There is no significant influence between project financing contracting on success of macye macye project in Rwanda.	.000	Rejected
H_{04}: There is no significant influence between project capital cost on success of macye macye project in Rwanda.	.001	Rejected

The hypothesis testing results show that non-recourse project financing significantly influences the success of the Macye Macye project in Rwanda, with all null hypotheses (H01, H02, H03, and H04) rejected ($p < 0.05$). These findings align with previous studies by Aven (2015), Müller et al. (2018), Sweis et al. (2019), and Tavares et al. (2016), highlighting the importance of risk profiling, risk transfer, clear contracts, and controlling capital costs for project success. Overall, these factors significantly contribute to the project's success.

VI. CONCLUSION

The study concluded that non-recourse project financing plays a crucial role in determining the success of large-scale initiatives such as the Macye Macye project. The hypothesis testing results confirmed that all four financing variables had a statistically significant impact on project success ($p < 0.05$). However, challenges remain in fully identifying risks early, enforcing risk transfer mechanisms comprehensively, and ensuring better communication of project objectives. Additionally, while project capital cost had the highest influence on success, continuous monitoring and cost audits should be strengthened.

RECOMMENDATIONS

This section presents recommendations based on the findings and analysis discussed in the previous chapters. These suggestions aim to address the identified issues and improve the current practices as a matter of fact, Communication of project objectives had the lowest rating among project success indicators (mean = 4.13). To address this, project managers should implement structured stakeholder engagement plans, including regular briefings and transparent reporting, to be carried out at key project milestones.

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