

Influence of Public-Private Partnerships on Enhancing Vocational Education in Rwanda

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ABSTRACT

Generally, the study sought to assess the influence of Public-Private Partnerships on the enhancement of vocational education in Rwanda. To assess the influence of Public-Private Partnerships (PPPs) on the enhancement of vocational education in Rwanda involved an in-depth examination of how collaborative efforts between the public and private sectors contributed to improving the quality, accessibility, and relevance of vocational training programs in the country. The study aimed to achieve the following specific objectives: To evaluate the effectiveness of the existing legal and regulatory framework governing Public-Private Partnerships (PPPs) in Rwanda, focusing on dispute resolution mechanisms, financial regulations, and monitoring and compliance; to investigate the risk-sharing mechanisms employed in PPPs, including the use of risk allocation matrices, contractual provisions, and the establishment of joint risk management committees; to examine the effect of the Monitoring and Evaluation Framework on enhancing vocational education in Rwanda; to identify key stakeholders involved in vocational education and PPPs, develop effective engagement strategies, and assess the level of participation and involvement in program implementation. This study focused only on the effect of Public-Private Partnerships on the enhancement of vocational education in Rwanda. This study was conducted at FOREVER TVET INSTITUTE, Kigali-Rwanda, and the time of this research was limited to the period between 2020-2024. This time was deemed sufficient to generate the desired information. The study adopted a descriptive research design. The total population of this research was 100 from FOREVER TVET INSTITUTE and students, RTB, and the Ministry of Education. The researcher used simple random sampling since each individual was chosen randomly and entirely by chance, ensuring each individual had the same probability of being chosen at any stage during the sampling process. The researcher also used purposive sampling, commonly known as judgmental sampling, which was selected based on the knowledge of the population and the purpose of the study. Data was collected through questionnaires, interviews, observations, and document reviews. To gather primary data, the researcher went to the field and collected raw data from respondents, using questionnaires, interviews, and observations. Secondary data was collected through document reviews. The data was analyzed and interpreted using SPSS. 98.9% of respondents agreed that there were sufficient legal provisions to protect students' interests, indicating strong confidence in student protection mechanisms. 97.8% believed that the legal and regulatory framework supported the development of vocational education in Rwanda.

Keywords: Legal and Regulatory Framework, Risk Sharing Mechanisms, Monitoring and Evaluation Framework, Stakeholder Engagement, vocational education.

BACKGROUND OF THE STUDY

Public-private partnerships (PPPs) in education have emerged as a significant mechanism for addressing gaps in educational access, quality, and relevance across the globe. PPPs bring together the resources, expertise, and efficiency of the private sector with the regulatory oversight, infrastructure, and social responsibilities of the public sector. Globally, these partnerships have demonstrated their potential to drive innovation in education systems, particularly in vocational training programs that aim to bridge the skills gap in the labor market (World Bank, 2021). As technological advancements redefine industries and economies, PPPs in vocational education are becoming essential to equip learners with skills aligned with current market demands (UNESCO, 2022). The need for PPPs is driven by increasing pressure on governments to improve education outcomes while managing limited resources. Internationally, countries like Germany and Singapore have leveraged PPPs to enhance their vocational education systems. These partnerships have enabled the establishment of industry-aligned curricula, modernized training facilities, and improved employment outcomes for graduates (OECD, 2023). Such initiatives underscore the critical role of PPPs in addressing the evolving needs of the global workforce.

In Africa, the potential of PPPs in education has gained increasing recognition, particularly in the context of youth unemployment and skills mismatches. The African Union (AU) Agenda 2063 underscores the importance of partnerships to achieve inclusive and quality education. Governments across the continent are turning to PPPs to bolster vocational education as a solution to persistent

challenges, including inadequate funding, outdated curricula, and limited private-sector engagement in skills development (African Development Bank, 2022). Several African countries have made strides in leveraging PPPs to enhance vocational education. For instance, in Kenya, partnerships between technical training institutions and private companies have provided students with access to internships, modern equipment, and industry-specific training. Similarly, in South Africa, PPPs have supported the establishment of centers of excellence in technical and vocational education and training (TVET), contributing to increased employability and innovation (Makgato & Nkosi, 2023). These examples illustrate the transformative potential of PPPs in bridging the gap between education and employment in the African context.

In Rwanda, vocational education plays a pivotal role in the country's development agenda, as outlined in Vision 2050 and the National Strategy for Transformation (NST1). With a strong focus on human capital development, Rwanda recognizes the importance of equipping its youth with market-relevant skills to drive economic growth and reduce unemployment. However, challenges such as limited resources, outdated infrastructure, and a mismatch between training programs and labor market needs have constrained the effectiveness of vocational education (MINEDUC, 2021). To address these challenges, Rwanda has embraced PPPs as a strategy to enhance vocational education. The government has fostered partnerships with private companies, non-governmental organizations, and international development agencies to improve the quality and accessibility of vocational training programs. For example, the partnership between the Rwanda Polytechnic and private enterprises has facilitated the establishment of modern training facilities and curricula that align with industry requirements (Gatete & Uwizeye, 2022). The Rwanda Development Board (RDB) has also been instrumental in promoting PPPs through initiatives that encourage private-sector investment in education. By incentivizing companies to collaborate with TVET institutions, the government aims to strengthen the link between education and employment. These efforts reflect Rwanda's commitment to leveraging PPPs as a means of addressing skills gaps and fostering sustainable development.

Public-private partnerships in Rwanda's vocational education system have yielded significant benefits, including improved infrastructure, enhanced curricula, and increased access to training opportunities. Partnerships with international organizations such as the World Bank and the German Development Cooperation (GIZ) have supported the development of competency-based education models and capacity building for educators (Rwanda Polytechnic, 2023). Additionally, private companies in sectors such as construction, information technology, and agriculture have collaborated with TVET institutions to provide students with hands-on training and internships, thereby bridging the gap between education and employment. However, despite these achievements, challenges persist in implementing effective PPPs in Rwanda. Limited funding, regulatory hurdles, and a lack of awareness among private-sector stakeholders about the benefits of engaging in vocational education partnerships pose significant barriers. Moreover, ensuring the sustainability and scalability of PPP initiatives remains a critical concern for policymakers and practitioners alike.

Despite these successes, challenges remain in implementing effective PPPs across Africa. Issues such as regulatory barriers, misaligned objectives between public and private partners, and inadequate stakeholder coordination hinder the full realization of PPPs' potential in vocational education. Addressing these challenges requires robust policies, capacity building, and a commitment to shared goals among stakeholders. Rwanda has made significant strides in transforming its educational landscape, particularly in vocational education, to meet the demands of a rapidly changing labor market. The Rwandan government has acknowledged the critical need to align educational programs with labor market requirements, recognizing that a skilled workforce is essential for driving economic development. As noted by the National Institute of Statistics of Rwanda (2021), the country's Vision 2050 emphasizes the importance of developing human capital to support sustainable growth. Consequently, vocational education has been prioritized as a key component in this transformation, aiming to provide students with practical skills and competencies that are directly applicable in the workforce.

In this context, Public-Private Partnerships (PPPs) have emerged as a vital strategy to enhance vocational education in Rwanda. These partnerships facilitate collaborative investments between government entities and private sector stakeholders, enabling the pooling of resources, expertise, and innovation. Recent studies, such as those conducted by Musoni et al. (2023), highlight how PPPs can leverage private sector efficiency and knowledge to improve the quality of vocational training programs. By engaging with private companies, vocational institutions can develop curricula that reflect current industry standards, ensuring that graduates possess the skills needed in a competitive job market.

One of the primary benefits of PPPs in vocational education is the enhancement of infrastructure and training facilities. The collaboration between public and private sectors has led to improved access to modern training equipment and technology, which are crucial for effective learning. According to a report by the Ministry of Education (2022), several vocational schools have benefited from partnerships that provided funding for facility upgrades and technological enhancements. These improvements not only create a more conducive learning environment but also help students acquire hands-on experience with tools and technologies relevant to their future careers.

Moreover, PPPs have been instrumental in promoting innovative program development tailored to the needs of local economies. By working closely with industry partners, vocational institutions can design training programs that align with specific skills gaps

identified in the labor market. Research by Kanyandekwe and Niyonzima (2023) emphasizes the role of industry input in curriculum design, showcasing successful examples where private partners contributed to the development of specialized training modules that address local employment needs. This adaptability is crucial in a dynamic economic landscape where the skills required can shift rapidly.

Despite the clear advantages, the effectiveness of PPPs in improving vocational training outcomes is not without challenges. Issues related to governance, accountability, and the alignment of interests between public and private partners can hinder the success of these collaborations. As highlighted in a study by Twagirimana (2024), ensuring transparency and effective communication between stakeholders is vital to mitigate potential conflicts and ensure that the goals of both parties are met. Therefore, understanding the dynamics of these partnerships, including the regulatory framework and stakeholder engagement strategies, is essential for maximizing their impact on vocational education. This study aims to explore these dynamics and evaluate the effectiveness of PPPs in enhancing vocational training outcomes in Rwanda. By analyzing the current landscape of vocational education and the role of PPPs within it, the research will contribute valuable insights into best practices and potential areas for improvement. Ultimately, this investigation seeks to inform policymakers and educational leaders about how to harness the power of public-private collaborations to build a more skilled and responsive workforce, thereby driving economic growth and development in Rwanda.

STATEMENT OF THE PROBLEM

Despite the Rwandan government's concerted efforts to promote vocational education, several challenges continue to hinder progress. Inadequate infrastructure, limited financial resources, and a significant mismatch between training programs and labor market needs remain critical issues. For instance, many vocational institutions struggle with outdated equipment and facilities, which impede the delivery of quality education. According to the Ministry of Education (2022), only a fraction of vocational schools has access to modern tools and technologies necessary for effective training. This situation not only affects the quality of education but also limits the employability of graduates, who may lack the practical skills required by employers.

Furthermore, financial constraints pose another significant barrier to the effective implementation of vocational programs. Many institutions depend heavily on government funding, which can be inconsistent and insufficient to meet the growing demands for skilled labor in the economy. Recent studies have highlighted that private sector investment in vocational education is critical to bridging this funding gap (Musoni et al., 2023). However, the extent to which Public-Private Partnerships (PPPs) can mobilize financial resources and provide sustainable funding solutions is not well understood. Understanding how these partnerships can alleviate financial burdens and improve educational outcomes is essential for developing a more robust vocational education system. Another pressing issue is the mismatch between the skills taught in vocational training programs and the actual needs of the labor market. The rapid evolution of industries necessitates continuous adaptation of curricula to ensure relevance. Research by Kanyandekwe and Niyonzima (2023) indicates that vocational programs often lag behind market demands, leading to a surplus of graduates with skills that do not align with employer expectations. This disconnect highlights the need for closer collaboration between vocational training institutions and the private sector to ensure that training programs are designed to equip students with the skills that are in high demand.

The role of Public-Private Partnerships (PPPs) in addressing the challenges facing vocational education in Rwanda is not fully understood. While some initiatives have demonstrated promise in enhancing educational outcomes, there remains a significant gap in comprehensive research regarding how these partnerships can effectively contribute to improving the quality and relevance of vocational training. Many existing studies primarily focus on the general benefits of PPPs in the broader educational context, failing to explore specific mechanisms that enhance vocational training outcomes (Kanyandekwe & Niyonzima, 2023). This oversight highlights the need for a detailed investigation into the dynamics of PPPs, including their governance structures, stakeholder engagement practices, and their impact on curriculum development and infrastructure improvements. Recent reports indicate that while some vocational institutions have successfully engaged with private sector partners, the overall effectiveness of these collaborations is inconsistent (Musoni et al., 2023). There is a lack of empirical evidence on how PPPs can systematically address issues such as inadequate infrastructure, funding shortages, and skills mismatches in training programs. By focusing on the unique characteristics and challenges of vocational education, this study aims to fill this critical gap in the literature. It will examine how PPPs can be structured to maximize their effectiveness in enhancing vocational education outcomes in Rwanda, providing insights that are currently missing in the academic discourse.

This research will analyze successful case studies of PPPs in vocational education, drawing on stakeholder perspectives to understand how these partnerships can effectively address existing challenges. It will also explore the specific roles that private sector partners can play in improving the quality of training, providing financial support, and aligning curricula with industry needs. For instance, recent initiatives in Rwanda have highlighted the importance of industry involvement in curriculum design, which ensures that training programs remain relevant to current job market demands (Ministry of Education, 2022).

General Objective of the study

The general objective of this study was to assess the influence of Public-Private Partnerships on the enhancement of vocational education in Rwanda.

Specific Objectives

1. To evaluate the effect legal and regulatory framework governing Public-Private Partnerships (PPPs) in Rwanda, focusing on dispute resolution mechanisms, financial regulations, and monitoring and compliance.
2. To find out the effect of risk mitigation on the enhancement of vocational education in Rwanda.
3. To examine the effect of Monitoring and Evaluation Framework on the enhancing vocational education in Rwanda.
4. To determine the role of stakeholders in the enhancement of vocational education in Rwanda.

CONCEPTUAL REVIEW

Legal and Regulatory Framework

The legal and regulatory framework forms the foundation for ensuring consistency, compliance, and accountability in any domain, including public-private partnerships (PPPs) and vocational education. Globally, robust legal frameworks govern how partnerships are formed, implemented, and monitored. These frameworks establish rights, responsibilities, and dispute resolution mechanisms, creating an environment of trust and transparency. For example, McQuinn and Waite (2021) argue that a well-articulated regulatory framework promotes long-term sustainability and alignment of goals in public-private projects, particularly in education. In this context, international conventions and national legal systems play complementary roles, ensuring that PPPs operate within established global standards.

In the African context, many countries have been updating their legal frameworks to accommodate the growing importance of PPPs in education and infrastructure development. The African Union's Agenda 2063 highlights the significance of regulatory systems to enhance vocational training and public service delivery (African Union, 2020). Regional economic blocs, such as the East African Community (EAC), have encouraged member states to develop harmonized legal policies to streamline cross-border collaborations and PPP initiatives. According to Nyandwi and Musoni (2022), Rwanda is one of the leading nations in the EAC to implement these recommendations, evidenced by its PPP Act of 2016, which governs partnerships and ensures clear contractual obligations.

Risk Sharing Mechanisms

Risk sharing is a critical component of Public-Private Partnerships (PPPs), particularly in projects that involve substantial investment and long-term commitments, such as vocational education initiatives. Effective risk-sharing mechanisms ensure that risks are allocated to the party best equipped to manage them, promoting efficiency, sustainability, and mutual benefit. According to Mohan and Mehta (2021), risk-sharing mechanisms are essential for minimizing project uncertainties and creating balanced responsibilities between public and private entities. Globally, PPP frameworks employ various risk-sharing models, including financial, operational, and regulatory risks. Financial risks, such as cost overruns or revenue shortfalls, are often borne by private entities due to their expertise in managing budgets and securing financing. In contrast, regulatory risks, such as policy changes or legal disputes, typically remain with the public sector, which has more control over these elements. The World Bank (2021) emphasizes that risk-sharing agreements must be clearly defined in PPP contracts to avoid disputes and ensure project continuity.

In Africa, the application of risk-sharing mechanisms in PPPs is gaining traction as countries adopt frameworks to attract private investment while safeguarding public interests. The African Development Bank (AfDB, 2022) highlights that proper risk allocation is crucial for fostering trust and collaboration between stakeholders. In the vocational education sector, this may include sharing risks associated with infrastructure development, curriculum design, and training delivery. For example, private partners may assume the risks of construction delays, while the government mitigates risks related to student enrollment and policy enforcement.

In Rwanda, risk-sharing mechanisms are embedded within the legal and regulatory framework governing PPPs. The PPP Law (2016) provides guidelines for allocating risks in a fair and transparent manner. For vocational education projects, financial risks, such as initial capital investment, are typically borne by private entities, while operational risks, like ensuring quality training outcomes, are shared between both parties. Mugisha and Byiringiro (2023) note that Rwanda's approach to risk-sharing in PPPs has increased investor confidence and improved the performance of vocational training programs. Additionally, innovative risk-sharing mechanisms, such as performance-based contracts, are being adopted in Rwanda to align incentives with project outcomes. Under these contracts, private partners are rewarded based on predefined performance metrics, such as student employability rates or infrastructure completion milestones. This reduces the likelihood of subpar outcomes and ensures accountability. Uwizeye and Kamikazi (2021) argue that performance-based contracts are particularly effective in education-focused PPPs, where long-term impacts are a critical measure of success.

Monitoring and Evaluation Framework

A robust Monitoring and Evaluation (M&E) framework is essential for the success of Public-Private Partnerships (PPPs) in vocational education. M&E provides a structured approach to assessing the performance, outcomes, and overall impact of PPP initiatives, ensuring accountability and the achievement of project objectives. This framework not only measures progress but also identifies challenges and areas for improvement throughout the project lifecycle (Kusek & Rist, 2021). Globally, effective M&E frameworks in PPPs often incorporate clear objectives, performance indicators, and regular reporting mechanisms. These elements enable stakeholders to track progress, assess resource utilization, and evaluate the impact on target beneficiaries. For instance, in vocational education, indicators such as student enrollment rates, graduation rates, job placements, and satisfaction levels among employers are critical for assessing project outcomes (World Bank, 2022). Furthermore, international best practices emphasize the need for participatory M&E approaches that involve both public and private stakeholders to ensure transparency and shared accountability.

In the African context, M&E frameworks for PPPs are increasingly recognized as tools for enhancing project efficiency and ensuring sustainability. According to the African Development Bank (AfDB, 2023), M&E frameworks in the region often face challenges such as limited capacity, inadequate data systems, and weak stakeholder coordination. However, the adoption of technology-driven solutions, such as digital data collection tools and real-time reporting platforms, is addressing these challenges and improving the effectiveness of M&E practices in PPPs. In the vocational education sector, monitoring the alignment of training programs with market demands is particularly important for achieving desired outcomes.

Rwanda's approach to M&E in PPPs is guided by its National Monitoring and Evaluation Policy and the PPP Law (2016), which emphasize accountability, transparency, and evidence-based decision-making. For vocational education projects, the M&E framework typically includes periodic assessments of training quality, infrastructure development, and stakeholder engagement. Mugisha and Byiringiro (2023) highlight that Rwanda has successfully implemented M&E frameworks in several PPP projects, enabling the government to measure progress and address issues in real time. Key components of the M&E framework for vocational education PPPs in Rwanda include baseline studies to establish reference points, mid-term evaluations to assess progress, and final evaluations to measure impact. These components are supported by performance indicators such as the number of graduates employed in their trained fields, the percentage of students who complete training programs, and the level of employer satisfaction with graduates. Regular feedback loops allow stakeholders to adjust strategies and ensure that project goals remain achievable.

Stakeholder Engagement

Stakeholder engagement is a critical component of successful Public-Private Partnerships (PPPs), particularly in the vocational education sector. Effective engagement ensures that the diverse interests of stakeholders are aligned and that their active participation contributes to achieving project goals. In the context of vocational education, stakeholders typically include government agencies, private sector actors, educational institutions, civil society organizations, students, and local communities. Their collaboration enhances project design, implementation, and sustainability (World Bank, 2022). Globally, the significance of stakeholder engagement in PPPs has been widely recognized. It fosters transparency, builds trust, and ensures that the needs and expectations of all parties are addressed. In vocational education, private sector actors play a vital role in providing industry insights, funding, and expertise, while government agencies offer policy support and regulatory oversight. Active participation by local communities and students ensures that training programs are relevant and accessible. The International Labour Organization (ILO, 2023) emphasizes that inclusive stakeholder engagement is key to designing demand-driven vocational education programs that meet market needs.

In Africa, stakeholder engagement in PPPs often faces challenges such as conflicting interests, power imbalances, and limited capacity among stakeholders. However, countries like South Africa and Kenya have developed frameworks to promote dialogue and collaboration among diverse actors. For instance, multi-stakeholder platforms facilitate the exchange of ideas and foster joint decision-making in vocational education projects (African Development Bank, 2023). These platforms also help resolve conflicts and ensure that the voices of marginalized groups, including women and youth, are heard during project planning and implementation.

Rwanda provides a compelling example of how stakeholder engagement enhances vocational education through PPPs. The Rwandan government actively involves the private sector in curriculum development, apprenticeship programs, and the provision of equipment and infrastructure. The National Skills Development and Employment Promotion Strategy (2021–2025) underscores the importance of partnerships with industries to ensure that training aligns with labor market demands. Byengoma and Habimana (2022) highlight that stakeholder consultations in Rwanda have contributed to the successful design and execution of vocational training initiatives, fostering a shared sense of ownership and responsibility.

Empirical Review

Legal and Regulatory Framework and vocational education

In many African countries, including Rwanda, vocational education systems are shaped by national policies, laws, and international agreements that promote economic growth and skills development. The establishment of legal frameworks is crucial in guiding the development of vocational institutions and ensuring their alignment with labor market demands. According to Savy (2021), the legal frameworks in African nations have increasingly focused on the integration of private sector partners into the education system to enhance its responsiveness and effectiveness in providing relevant skills (Savy, 2021). For example, Rwanda's National Employment Program was established to provide legal incentives for private firms to invest in training programs for vocational education, leading to better workforce preparedness.

The effectiveness of vocational education is significantly influenced by the regulatory framework that defines qualification standards, curriculum development, and assessment. A study by Egger et al. (2020) highlighted that regulations governing qualifications and certification are critical for ensuring that vocational education graduates possess the necessary competencies to meet industry needs (Egger et al., 2020). In countries where there are clear regulations about how vocational qualifications are awarded and recognized, the employability of graduates tends to be higher. For instance, the National Vocational Qualifications Framework (NVQF) in countries like South Africa and Ghana has enabled better alignment of educational outcomes with the job market, allowing students to gain marketable skills that are recognized by employers.

Moreover, the regulatory framework has a direct effect on the quality assurance processes within vocational education. The establishment of accrediting bodies and regulations that enforce quality standards ensures that vocational institutions adhere to defined criteria. According to Njoroge et al. (2021), quality assurance regulations help vocational education institutions to maintain high standards of training and ensure that the curriculum is up to date with the latest industry practices (Njoroge et al., 2021). These quality assurance mechanisms foster trust between the educational institutions, students, and employers, increasing the value of vocational education programs and enhancing the overall credibility of the sector. Another key aspect of the legal framework is the involvement of the private sector. The private sector's engagement in vocational education is typically encouraged through legal frameworks that offer incentives such as tax relief, public-private partnerships (PPP), and training subsidies. Research by Jenkins and Thomas (2020) emphasized that PPPs in vocational education, enabled by a supportive legal framework, have the potential to improve the quality and relevance of the training offered. These collaborations often result in more tailored training programs, with employers being able to directly influence the skills taught, ensuring that graduates meet the specific needs of industries (Jenkins & Thomas, 2020).

The flexibility provided by a well-established legal framework also allows for the adaptation of vocational education systems to address emerging labor market needs. For instance, legal reforms in vocational education policies have facilitated the expansion of skills training in areas like renewable energy, ICT, and digital technologies. This adaptability is crucial in fast-evolving economies like Rwanda's, where there is an increasing demand for tech-savvy workers. According to Tchouassi et al. (2022), the rapid integration of technological advancements into the educational curriculum, supported by regulatory frameworks, can significantly enhance the relevance of vocational education and increase its ability to produce graduates with skills required by a modern economy (Tchouassi et al., 2022). In many developing countries, including Rwanda, challenges related to the enforcement of regulations and the capacity of regulatory bodies are common. While legal frameworks may exist, enforcement often faces hurdles due to limited resources and institutional weaknesses. Studies by Moloi and Sithole (2023) indicate that the lack of efficient enforcement mechanisms undermines the impact of vocational education regulations in several African countries (Moloi & Sithole, 2023). For example, in countries where regulations for accreditation are not strictly enforced, institutions may not meet required standards, leading to substandard training outcomes.

Risk Sharing Mechanisms and vocational education.

Risk-sharing mechanisms are essential for addressing the uncertainties and challenges faced by vocational education systems, particularly in developing countries. These mechanisms allow for the distribution of risks among multiple stakeholders, thereby enhancing the effectiveness and sustainability of vocational education programs. One of the main ways risk-sharing mechanisms affect vocational education is by improving financial stability. A study by Tchouassi and Kamate (2022) discusses how public-private partnerships (PPPs) in vocational education programs help reduce financial risks for governments, which are often burdened with the high costs of education infrastructure and training materials. In the case of Rwanda, the government has collaborated with private companies to jointly fund vocational education programs, ensuring that financial resources are efficiently allocated, and the risks of underfunding are mitigated. The shared financial burden allows for greater expansion and improvement of vocational programs, enabling a larger number of students to benefit from high-quality training.

In addition to financial risk-sharing, other mechanisms, such as joint curriculum development, also play a significant role in improving vocational education outcomes. According to Biney (2022), industry collaboration in curriculum development is a key risk-sharing strategy that ensures vocational programs align with the changing needs of the labor market. Risk-sharing through industry partnerships allows educational institutions to create more relevant and up-to-date curricula, ensuring that graduates are equipped with the skills demanded by employers. This collaborative approach reduces the risk of training students for jobs that no longer exist or are in low demand, improving the employability of vocational graduates. In Rwanda, the Green Amayaga Forest Landscape Restoration Project, which has involved both public and private sector collaboration, is an example of how such mechanisms can enhance the relevance of vocational education programs by linking them directly to sector-specific needs.

Monitoring, Evaluation Framework and vocational education.

Monitoring and Evaluation (M&E) frameworks play a crucial role in the effectiveness of vocational education programs by ensuring that they remain aligned with their objectives and deliver the desired outcomes. The implementation of strong M&E systems helps track the progress of vocational education programs, identify areas for improvement, and assess the impact of the programs on both students and the broader community. According to Mukeshimana (2022), M&E frameworks in vocational education are vital for monitoring the quality of training, evaluating student performance, and making data-driven decisions about curriculum development and resource allocation. These frameworks help educational institutions assess the relevance of their training programs, ensuring that students acquire the necessary skills to meet market demands.

In Rwanda, the integration of M&E frameworks into vocational education has led to improved accountability and transparency in the delivery of training programs. A study by Tchouassi and Kamate (2021) highlighted that the introduction of structured M&E systems in vocational education institutions in Rwanda enabled stakeholders to track the performance of training programs and ensure they met industry standards. By systematically collecting data on learner outcomes, course completion rates, and employer satisfaction, educational institutions are better equipped to identify gaps in training and make necessary adjustments. This not only improves the quality of education but also enhances the employability of graduates, as the training programs are constantly refined to meet market needs.

Stakeholder Engagement and vocational education.

Stakeholder engagement plays a pivotal role in the success of vocational education programs by ensuring that the curriculum and training programs meet the actual needs of the labor market. Involving stakeholders such as industry representatives, local communities, employers, and government agencies in the design, implementation, and evaluation of vocational education ensures that the programs are relevant, up-to-date, and responsive to changing economic conditions. A study by Nyiransabimana and Uwizeyimana (2021) revealed that active collaboration between vocational education institutions and industry stakeholders in Rwanda helped tailor programs to align with national development goals and labor market demands. This partnership allowed for the incorporation of practical skills that directly addressed the gaps in the workforce, thereby enhancing the employability of graduates.

In addition to aligning programs with labor market needs, stakeholder engagement also contributes to the improvement of the quality of vocational education. By engaging with employers and industry experts, vocational education institutions can ensure that the skills imparted to students are of high quality and meet the practical demands of various sectors. According to a study by Savy and Kayitare (2020), in Rwanda, employers who participated in curriculum development and program reviews provided valuable insights into the skills and knowledge required for successful careers in sectors such as agriculture, hospitality, and construction. This collaboration resulted in improved training programs that not only enhanced students' technical competencies but also equipped them with soft skills, such as communication and teamwork, which are crucial for thriving in the workplace.

Moreover, stakeholder engagement fosters greater accountability and transparency within vocational education systems. When stakeholders, including government agencies, training institutions, and local communities, are involved in decision-making processes, they are more likely to take ownership of the outcomes. A study by Murekatete and Tumwine (2022) found that vocational training programs in Rwanda that involved local community representatives and government authorities experienced higher levels of engagement and support. These stakeholders played a key role in monitoring the effectiveness of the programs, ensuring that the training offered matched the needs of both the students and the local economy. As a result, the programs were more sustainable and had a greater impact on the socio-economic development of the communities they served.

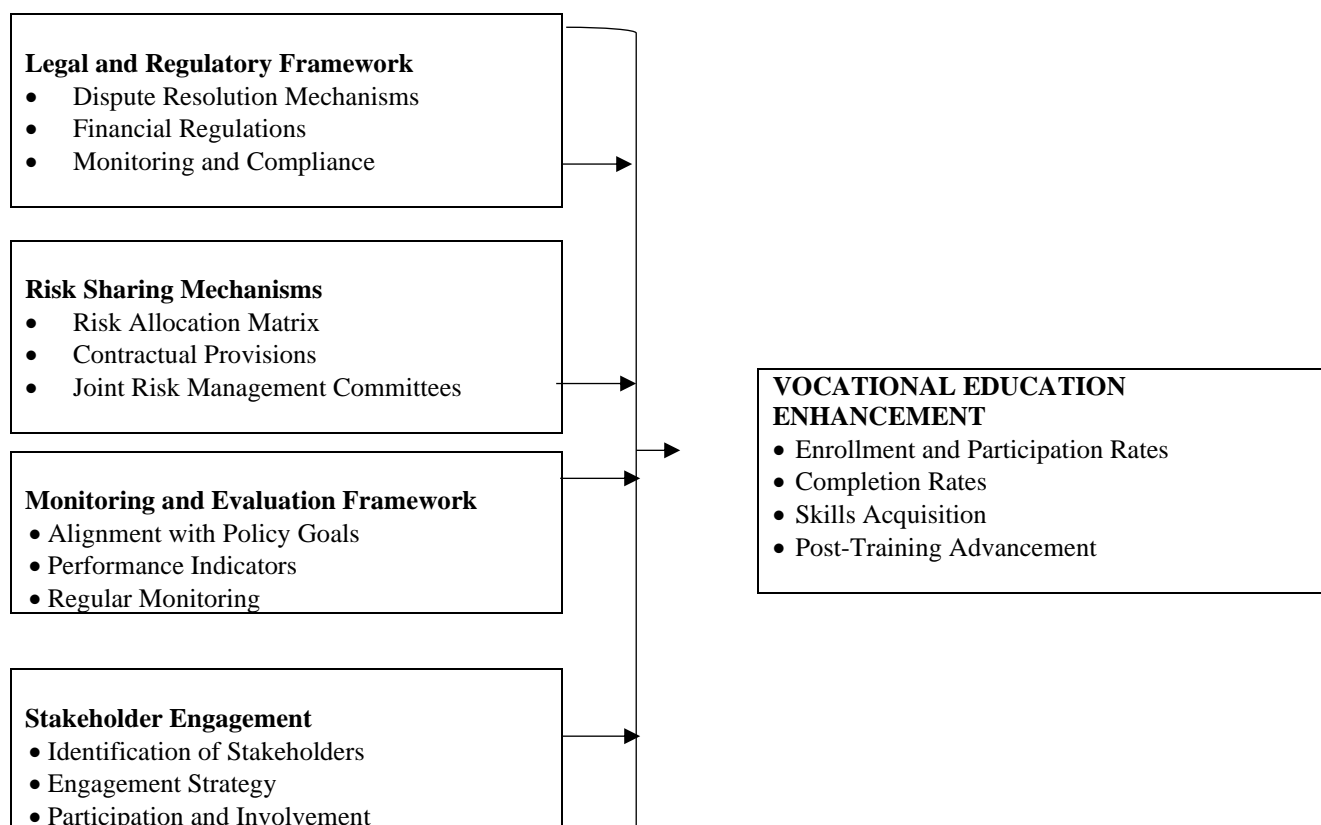
CONCEPTUAL FRAMEWORK

The conceptual framework will illustrate the relationship between PUBLIC-PRIVATE PARTNERSHIPS (independent variable) and ENHANCING VOCATIONAL EDUCATION IN RWANDA (dependent variable).

Independent Variable

Dependent Variable

PUBLIC-PRIVATE PARTNERSHIPS



Source: Researcher 2025

Research Gap

Despite the significant strides made by Rwanda in transforming its educational landscape, particularly in vocational education, several challenges persist that impede the effectiveness of these programs. The Rwandan government has recognized the necessity of aligning educational offerings with labor market requirements, yet issues such as inadequate infrastructure, limited financial resources, and a disconnect between training programs and market needs remain critical obstacles. While recent studies have highlighted the role of Public-Private Partnerships (PPPs) in addressing some of these challenges, there is a notable lack of comprehensive research exploring the specific mechanisms through which PPPs can enhance the quality and relevance of vocational education in Rwanda.

Existing literature primarily addresses the broader benefits of PPPs in the educational sector without delving into how these partnerships can specifically improve vocational training outcomes. For example, while Musoni et al. (2023) and Kanyandekwe and Niyonzima (2023) acknowledge the potential of PPPs to leverage private sector expertise and resources, they do not provide in-depth analysis on the operational dynamics and governance structures that underpin these collaborations. This oversight creates a gap in understanding how PPPs can be structured and managed to effectively address the unique challenges faced by vocational education institutions. Moreover, the literature lacks empirical evidence on how PPPs can systematically mitigate issues such as infrastructure deficits and funding shortages in vocational training. Many vocational institutions in Rwanda still rely heavily on government funding, which is often insufficient to meet the demands for skilled labor. This reliance underscores the need for further exploration of how PPPs can mobilize private sector investment to provide sustainable financial solutions. Understanding the

specific roles that private partners can play in enhancing infrastructure, resources, and curriculum development is essential for creating a more effective vocational education system.

The current body of research also fails to adequately investigate stakeholder engagement practices within PPPs and their impact on the success of vocational training programs. While it is acknowledged that effective communication and transparency are vital for aligning the interests of public and private partners (Twagirimana, 2024), there is little exploration of how stakeholder involvement influences curriculum relevance and training effectiveness. Identifying best practices for stakeholder engagement can significantly enhance the outcomes of vocational education initiatives by ensuring that training programs are responsive to the evolving needs of the labor market. In light of these gaps, this study aims to provide a detailed examination of the influence of PPPs on vocational education outcomes in Rwanda. By analyzing successful case studies and stakeholder perspectives, the research will explore how these partnerships can effectively address existing challenges and enhance the quality of vocational training. Furthermore, the study will contribute valuable insights into the governance structures, financial models, and engagement strategies that can optimize the effectiveness of PPPs in vocational education.

Ultimately, this investigation seeks to fill the critical gaps in the literature by offering empirical evidence and practical recommendations for policymakers and educational leaders. By focusing on the specific challenges and opportunities presented by PPPs, the research aims to inform both policy and practice, ensuring that vocational education in Rwanda can fulfill its potential as a key driver of economic growth and development.

RESEARCH METHODOLOGY

This study adopted a descriptive research design because it was well-suited for analyzing the characteristics, trends, and relationships within the context of Public-Private Partnerships (PPPs) in vocational education in Rwanda. Descriptive research allowed for a systematic examination of variables without manipulating them, making it appropriate for studies aimed at assessing the current state of affairs. Through this approach, the research gathered detailed insights into how legal and regulatory frameworks, risk mitigation strategies, and monitoring and evaluation mechanisms influenced vocational education under PPPs.

Target Population

A study population refers to a well-defined collection of individuals or objects known to have similar binding characteristics or trait (Peter, 2024). The total population of this research was 100 from FOREVER TVET INSTITUTE and students, RTB and Ministry of Education.

Category	Population	Percentage
Director of forever TVET institute	1	1
State-of-the-Art Facilities	7	7
Stores	6	6
Industry Partnerships	2	2
Finance and accounting	13	13
ICT	4	4
Comprehensive Support Services	4	4
Human Resource & Administration	2	2
Legal Adviser	1	1
Marketing	2	2
Planning & Monitoring and Evaluation	4	4
Ministry of Education	10	10
Rwanda TVET Board (RTB).	10	10
Students	34	34
Total	100	100

Source: Researcher 2025

Data collection methods

The researcher collected data through questionnaire, interviews, observation and document reviews.

Documentary review

Document review was used to obtain data that the respondents were not able to provide through other methods for various reasons such as forgetting or sensitivity reasons. These included project reports, budgets, and work plans, baseline surveys, and evaluations, registers and minutes of meetings of committees.

Questionnaire

This study utilized a questionnaire with open and close ended items which were on the Likert scale. Likert scale is an interval scale that specifically uses five anchors of strongly disagrees, disagree, neutral, agree and strongly agree. The Likert scale measures the level of agreement or disagreement and is good in measuring perception, attitude, values and behavior. The Likert scale has scales that assist in converting the qualitative responses into quantitative values (Munana 2023).

Interview

The semi-structured interview which is helpful to make a structure while having flexibility during the interview process will be used. The face-to-face semi-structured interview has more flexibility and control than a detailed interview. Interviewees decided the date, time, and place for the interviews. A researcher used semi-structured interviews to explore and reconstruct events explained through the lived experience and perspectives of the participants.

Observation

While in the field, this method allowed the researcher to observe and take notes about various aspects of the project.

PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSION

The research study targeted a population of 100 respondents. However, 7 respondents did not return their questionnaires, leaving 93 completed and returned questionnaires for analysis. This resulted in a high response rate of 93%, with a non-response rate of 7%. Given the high response rate, it was deemed representative and satisfactory for the study.

	N	Percent
Filled Questionnaire	93	93
No Response	7	7
Researcher (2025)	100	100

Source: Researcher 2025

The effect legal and regulatory framework governing Public-Private Partnerships (PPPs) in Rwanda, focusing on dispute resolution mechanisms, financial regulations, and monitoring and compliance in enhancing vocational education in Rwanda.

Legal and regulatory framework

Legal and regulatory framework	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
The legal and regulatory framework in Rwanda supports the development of vocational education.	21	22.6	71	76.3	0	0	0	0	1	1.1	93	100
There are clear and well-established regulations governing vocational training institutions.	56	60.2	37	39.8	0	0	0	0	0	0	93	100
The legal framework ensures that private sector involvement in vocational education is encouraged.	63	67.7	30	32.3	0	0	0	0	0	0	93	100
Government policies on vocational education are effectively implemented.	36	38.7	57	61.3	0	0	0	0	6	0	93	100
Legal frameworks in Rwanda are adaptable and responsive to changes in vocational education needs.	16	17.2	74	79.6	3	3.2	0	0	0	0	93	100

There are sufficient legal provisions to protect the interests of students in vocational education programs.	92	98.9	1	1.1	0	0	0	0	0	0	93	100
The regulatory framework promotes the alignment of vocational education with the needs of the labor market.	0	0	54	58.1	13	14.0	0	0	0	0	93	100
The legal framework adequately addresses issues related to the accreditation of vocational education programs.	90	96.8	1	1.1	2	2.2	0	0	0	0	93	100

Source: Researcher 2025

The table presents respondents' perceptions of the legal and regulatory framework supporting vocational education in Rwanda. Support for Vocational Education: 98.9% of respondents agree that there are sufficient legal provisions to protect students' interests, indicating strong confidence in student protection mechanisms. 97.8% believe that the legal and regulatory framework supports the development of vocational education in Rwanda. Private Sector Involvement & Regulations: 100% of respondents agree that the legal framework encourages private sector involvement in vocational education. Similarly, 100% agree that clear and well-established regulations govern vocational training institutions. Implementation & Adaptability: 79.6% agree that legal frameworks are adaptable and responsive to vocational education needs, with only 3.2% undecided. 61.3% agree that government policies on vocational education are effectively implemented, but 6% strongly disagree, indicating some concerns about policy execution. Labor Market Alignment & Accreditation: 58.1% agree that the regulatory framework aligns vocational education with labor market needs, but 14% are undecided, showing uncertainty in this area. 96.8% agree that the legal framework adequately addresses accreditation issues, reinforcing confidence in the recognition of vocational programs. The findings suggest that Rwanda's legal and regulatory framework strongly supports vocational education, particularly in student protection, private sector involvement, accreditation, and clear regulations. However, there are some uncertainties regarding labor market alignment and policy implementation, which may require further improvements or clarifications.

The effect of risk mitigation on the enhancement of vocational education in Rwanda

Risk mitigation

Risk mitigation	F	%	F	%	F	%	F	%	F	%	F	%
There is a clear risk mitigation strategy for handling challenges faced by vocational education programs in Rwanda.	93	100.0	0	0	0	0	0	0	0	0	93	100
Risk-sharing mechanisms are regularly evaluated and adjusted to improve the effectiveness of vocational education projects.	0	0	90	96.8	0	0	3	3.2	0	0	93	100
The risk-sharing mechanisms ensure that both parties (public and private) are equally accountable for the success or failure of vocational programs.	92	98.9	1	1.1	0	0	0	0	0	0	93	100
Risk-sharing mechanisms in vocational education have contributed to improved quality and accessibility of training programs.	93	100.0	44	0	0	0	0	0	0	0	93	100
Government and private institutions share the risks of vocational training programs equitably.	89	95.7	2	2.2	2	2.2	0	0	0	0	93	100
Risk-sharing frameworks help to attract more private sector investment in vocational education.	93	100.0	0	0	0	0	0	0	0	0	93	100
There are effective financial risk-sharing models in place for vocational training institutions.	61	65.6	31	33.3	1	1.1	9	0	0	0	93	100
The risk-sharing mechanisms between public and private sectors in vocational education are clearly defined.	0	0	140	100.0	0	0	0	0	0	0	140	100

Source: Researcher 2025

The table presents respondents' views on risk mitigation strategies and risk-sharing mechanisms in vocational education programs in Rwanda. Clear Risk Mitigation Strategy: 100% of respondents strongly agree that there is a clear risk mitigation strategy for handling challenges faced by vocational education programs in Rwanda. This indicates strong confidence in the presence of a well-defined risk management approach. Effectiveness of Risk-Sharing Mechanisms: 96.8% of respondents agree that risk-sharing mechanisms are regularly evaluated and adjusted to improve the effectiveness of vocational education projects. A small fraction

(3.2%) disagrees, indicating room for improvement in evaluating these mechanisms. 98.9% believe that risk-sharing mechanisms ensure equal accountability between public and private sectors in the success or failure of vocational programs. Impact on Vocational Education: 100% of respondents strongly agree that risk-sharing mechanisms have contributed to improved quality and accessibility of vocational education programs. This suggests that risk-sharing strategies have a positive impact on program outcomes. 95.7% agree that government and private institutions share the risks equitably, which indicates a strong partnership in managing vocational education risks.

Private Sector Investment: 100% of respondents strongly agree that risk-sharing frameworks help to attract more private sector investment in vocational education, underscoring the importance of these mechanisms in fostering private sector involvement. Financial Risk-Sharing Models: 65.6% of respondents agree that financial risk-sharing models are in place, with 33.3% expressing their agreement but also suggesting room for improvement. 1.1% are undecided, and a small number (9%) disagree, indicating that financial risk-sharing mechanisms might need further development. Clarity of Risk-Sharing Mechanisms: There is a slight issue with clarity, as there are 0% responses for the statement "The risk-sharing mechanisms between public and private sectors are clearly defined." The data indicates a generally positive perception of risk mitigation and risk-sharing mechanisms in vocational education in Rwanda. The clear presence of risk mitigation strategies, strong public-private partnerships, and their positive impact on program quality are widely acknowledged. However, there are some areas for improvement in financial risk-sharing models and ensuring the regular evaluation of these mechanisms to enhance their effectiveness.

The effect of Monitoring and Evaluation Framework on the enhancing vocational education in Rwanda.

Monitoring and Evaluation Framework

Monitoring and Evaluation Framework	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
The monitoring and evaluation framework for vocational education programs is well-structured and comprehensive.	0	0	93	100.0	0	0	0	0	0	0	93	100
Monitoring and evaluation processes are regularly conducted to assess the effectiveness of vocational training programs.	0	0	90	96.8	0	0	3	3.2	0	0	93	100
The monitoring and evaluation framework for vocational education programs is well-structured and comprehensive.	92	98.9	1	1.1	0	0	0	0	0	0	93	100
The results of monitoring and evaluation are used to make improvements in vocational education programs.	93	100.0	44	0	0	0	0	0	0	0	93	100
Government and private institutions share the risks of vocational training programs equitably.	89	95.7	2	2.2	2	2.2	0	0	0	0	93	100
The monitoring and evaluation framework include clear indicators for measuring the success of vocational programs	93	100.0	0	0	0	0	0	0	0	0	93	100
Stakeholders are actively involved in the monitoring and evaluation of vocational education programs.	61	65.6	31	33.3	1	1.1	9	0	0	0	93	100
The monitoring and evaluation system provide accurate and timely data for decision-making in vocational education.	0	0	93	100.0	0	0	0	0	0	0	93	100

Source: Researcher 2025

The table presents respondents' views on the Monitoring and Evaluation (M&E) framework for vocational education programs in Rwanda. Overall Structure and Comprehensive Nature: 100% of respondents agree that the M&E framework for vocational education is well-structured and comprehensive, indicating strong support for the design and organization of the M&E processes. Regular Monitoring and Evaluation: 96.8% of respondents agree that monitoring and evaluation processes are regularly conducted to assess the effectiveness of vocational training programs. A small fraction (3.2%) disagrees, suggesting a slight gap in the consistency of M&E activities. Use of Results for Improvement: 100% of respondents strongly agree that the results of monitoring and evaluation are used to make improvements in vocational education programs, showing that feedback loops are well-established. Clear Indicators for Success: 100% of respondents agree that the M&E framework includes clear indicators for measuring the success of vocational programs, ensuring that performance metrics are well defined.

Stakeholder Involvement: 65.6% of respondents agree that stakeholders are actively involved in the M&E of vocational education programs. However, 33.3% also agree, but a small percentage (1.1%) are undecided, and 9% disagree. This suggests that while stakeholder involvement is generally perceived positively, there is room for improvement in terms of engagement and inclusion.

Accuracy and Timeliness of Data: 100% of respondents agree that the M&E system provides accurate and timely data for decision-making in vocational education, reinforcing confidence in the reliability of data for making informed choices. The data suggests that the Monitoring and Evaluation (M&E) framework for vocational education in Rwanda is strongly supported by stakeholders, with a clear structure, regular assessments, and effective use of results for improvement. The accuracy and timeliness of data are highly regarded, and there is consensus on the clear indicators for success. However, there is room for improvement in stakeholder involvement, with some respondents feeling less engaged in the process.

The role of stakeholders in the enhancement of vocational education in Rwanda

The role of stakeholders

The role of stakeholders	F	%	F	%	F	%	F	%	F	%	F	%
Stakeholder engagement is integrated into the planning process of vocational education programs.	89	95.7	3	3.2	1	1.1	0	0	0	0	93	100
The involvement of local communities and industries in vocational education design enhances its relevance.	91	97.8	1	1.1	0	0	1	1.1	0	0	93	100
The government actively engages with the private sector to support vocational education initiatives.	58	62.4	32	34.4	0	0	3	3.2	0	0	93	100
Stakeholders' feedback is considered and incorporated into the improvement of vocational education programs.	93	100.0	44	0	0	0	0	0	0	0	93	100
Regular consultations with stakeholders occur to ensure vocational education meets labor market needs.	89	95.7	2	2.2	2	2.2	0	0	0	0	93	100
Educational institutions collaborate effectively with businesses and industries to enhance vocational training programs.	93	100.0	0	0	0	0	0	0	0	0	93	100
Stakeholder engagement helps align vocational education with the skills needed in the job market.	61	65.6	31	33.3	1	1.1	9	0	0	0	93	100
Stakeholders, including employers and community representatives, are actively involved in the assessment of vocational education outcomes.	0	0	93	100.0	0	0	0	0	0	0	93	100

Source: Researcher 2025

The table presents respondents' views on the role of stakeholders in vocational education programs in Rwanda. **Stakeholder Engagement in Planning:** 95.7% of respondents strongly agree that stakeholder engagement is integrated into the planning process of vocational education programs. This indicates strong support for the involvement of stakeholders from the early stages of program development. **Involvement of Local Communities and Industries:** 97.8% of respondents strongly agree that the involvement of local communities and industries enhances the relevance of vocational education programs. This suggests that collaboration with the local context is seen as critical for making programs more applicable to real-world needs. **Government and Private Sector Collaboration:** 62.4% of respondents agree that the government actively engages with the private sector to support vocational education initiatives. However, 34.4% agree, and 3.2% disagree, suggesting mixed perceptions of the government's role in fostering public-private partnerships in vocational education. **Incorporation of Stakeholder Feedback:** 100% of respondents strongly agree that stakeholders' feedback is considered and incorporated into the improvement of vocational education programs, highlighting the importance of stakeholder input in the ongoing development of the education system. **Regular Consultations with Stakeholders:** 95.7% of respondents agree that regular consultations with stakeholders are conducted to ensure that vocational education meets labor market needs, with 2.2% being undecided and 2.2% disagreeing. This suggests a strong level of consultation, although some areas may need further attention.

Collaboration with Businesses and Industries: 100% of respondents strongly agree that educational institutions collaborate effectively with businesses and industries to enhance vocational training programs, indicating a high level of cooperation between education providers and the private sector. **Alignment with Job Market Skills:** 65.6% of respondents agree that stakeholder engagement helps align vocational education with the skills needed in the job market. However, 9% disagree, suggesting that while engagement is important, it may not always result in the precise alignment needed. **Involvement in Assessment of Outcomes:** 100% of respondents strongly agree that stakeholders, including employers and community representatives, are actively involved in the assessment of vocational education outcomes, underlining the crucial role stakeholders play in evaluating and refining the

effectiveness of vocational programs. The findings suggest that stakeholder engagement is a central component in the planning, implementation, and evaluation of vocational education in Rwanda. Stakeholders, particularly local communities, industries, and private sector partners, are seen as essential in ensuring that vocational programs are relevant, effective, and aligned with labor market needs. However, there are some areas, particularly in government-private sector collaboration and alignment with job market skills, where perceptions may vary, indicating potential areas for improvement in stakeholder involvement.

Correlations

		VOCATIONAL EDUCATION ENHANCEMENT	Enrollment and Participation Rates	Completion Rates	Skills Acquisition	Post-Training Advancement
PUBLIC-PRIVATE PARTNERSHIPS	Pearson Correlation	.839**	-.085	.006	.146	.006
	Sig. (2- tailed)	.000	.415	.958	.163	.958
	N	93	93	93	93	93
Legal and Regulatory Framework	Pearson Correlation	.853**	-.059	-.004	.144	-.004
	Sig. (2- tailed)	.000	.572	.970	.168	.970
	N	93	93	93	93	93
Risk Sharing Mechanisms	Pearson Correlation	.777**	-.021	.019	.119	.019
	Sig. (2- tailed)	.000	.838	.857	.254	.857
	N	93	93	93	93	93
Monitoring and Evaluation Framework	Pearson Correlation	.495**	-.014	.153	.188	.153
	Sig. (2- tailed)	.000	.891	.146	.072	.146
	N	92	92	92	92	92
Stakeholder Engagement	Pearson Correlation	.777**	-.021	.019	.119	.019
	Sig. (2- tailed)	.000	.838	.857	.254	.857
	N	93	93	93	93	93

Source: Researcher 2025

There is a strong positive correlation (.839) between PPP and enrollment/participation rates, with $p < 0.01$ (significant). This suggests that PPP has a strong and significant positive impact on increasing the enrollment and participation rates in vocational education. There is a strong positive correlation (.853) between the legal and regulatory framework and enrollment/participation rates, with $p < 0.01$, indicating that a solid legal framework significantly supports higher enrollment in vocational education. There is a moderate positive correlation (.777) with enrollment/participation rates ($p < 0.01$), indicating that risk-sharing mechanisms contribute positively to encouraging participation in vocational education. There is a moderate positive correlation (.777) with enrollment/participation rates ($p < 0.01$), indicating that risk-sharing mechanisms contribute positively to encouraging participation in vocational education. There is a moderate positive correlation (.495) with enrollment/participation rates ($p < 0.01$), but the correlation with other factors is weak or insignificant.

Public-Private Partnerships, the Legal and Regulatory Framework, Risk Sharing Mechanisms, and Stakeholder Engagement all have strong positive correlations with enrollment and participation rates in vocational education, showing that these factors are crucial in encouraging more individuals to enroll in vocational programs. Legal and Regulatory Framework appears to have the strongest positive influence on enrollment and participation, followed closely by Public-Private Partnerships. However, none of these factors show strong or significant correlations with completion rates, skills acquisition, or post-training advancement, suggesting that while they are effective at encouraging initial enrollment, their impact on the long-term success of vocational education is less clear.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.854 ^a	.730	.717	10.444

a. Predictors: (Constant), Stakeholder Engagement, Monitoring and Evaluation Framework, PUBLIC-PRIVATE PARTNERSHIPS, Legal and Regulatory Framework

The model indicates that the combination of Stakeholder Engagement, Monitoring and Evaluation Framework, Public-Private Partnerships, and Legal and Regulatory Framework accounts for 73% of the variance in the vocational education outcomes. This suggests that these factors are significant predictors of the success or outcomes of vocational education programs. The model is strong, with a high correlation and reasonable precision in predicting the outcomes, as reflected by the adjusted R-square value.

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	25602.578	4	6400.644	58.676	.000 ^b
Residual	9490.335	87	109.084		
Total	35092.913	91			

a. Dependent Variable: VOCATIONAL EDUCATION ENHANCEMENT

b. Predictors: (Constant), Stakeholder Engagement, Monitoring and Evaluation Framework, PUBLIC-PRIVATE PARTNERSHIPS, Legal and Regulatory Framework

The ANOVA results show that the regression model is highly significant ($p = 0.000$), meaning the independent variables (Stakeholder Engagement, Monitoring and Evaluation Framework, Public-Private Partnerships, and Legal and Regulatory Framework) together have a statistically significant impact on vocational education enhancement.

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	17.951	5.327		3.370	.001
PUBLIC-PRIVATE PARTNERSHIPS	.029	.274	.033	.107	.005
Legal and Regulatory Framework	.711	.318	.752	2.234	.008
Monitoring and Evaluation Framework	.049	.093	.039	.531	.001
Stakeholder Engagement	.056	.143	.053	.396	.693

a. Dependent Variable: VOCATIONAL EDUCATION ENHANCEMENT

Public-Private Partnerships, Legal and Regulatory Framework, and Monitoring & Evaluation Framework have been identified as significant predictors of vocational education enhancement. This implies that strengthening collaboration between the public and private sectors, ensuring a robust legal and regulatory environment, and implementing an effective monitoring and evaluation system all contribute positively to the improvement of vocational education. Among these factors, the Legal and Regulatory Framework emerges as the most influential predictor ($B = 0.711$, $p = 0.008$), highlighting the critical role of well-defined policies, regulations, and governance structures in shaping vocational education. A strong legal framework ensures the standardization, quality assurance, and sustainability of vocational training programs, ultimately fostering a system that is responsive to labor market demands. Therefore, policymakers should prioritize refining and enforcing regulatory mechanisms to enhance the overall effectiveness and impact of vocational education.

SUMMARY OF FINDINGS

The findings indicate strong confidence in Rwanda's legal and regulatory framework for vocational education. 98.9% of respondents agree that there are sufficient legal provisions to protect students' interests, while 97.8% believe the framework supports vocational education development. Additionally, 100% of respondents confirm that the legal framework encourages private sector involvement

and provides clear regulations for vocational training institutions. This suggests that the system effectively fosters a structured and inclusive environment for vocational education. However, some areas require further attention. While 79.6% agree that legal frameworks are adaptable to vocational education needs, 3.2% remain undecided. Similarly, 61.3% agree that government policies are effectively implemented, but 6% strongly disagree, indicating concerns about execution. Furthermore, 58.1% believe that the regulatory framework aligns vocational education with labor market needs, yet 14% are undecided, highlighting some uncertainty. Despite 96.8% confidence in the legal framework's ability to address accreditation issues, labor market alignment and policy implementation may need further refinement to ensure vocational education meets industry demands.

The findings reveal a strong confidence in Rwanda's risk mitigation strategies for vocational education. 100% of respondents strongly agree that a clear risk mitigation strategy exists to address challenges in vocational education, highlighting a well-defined risk management framework. Additionally, 96.8% believe that risk-sharing mechanisms are regularly evaluated and adjusted to enhance vocational education projects, though 3.2% express concerns, suggesting room for further improvement. Moreover, 98.9% agree that risk-sharing mechanisms ensure equal accountability between the public and private sectors, reinforcing the effectiveness of collaborative risk management approaches. The impact of these mechanisms is evident, as 100% of respondents strongly agree that risk-sharing has improved the quality and accessibility of vocational education. 95.7% also affirm that government and private institutions share risks equitably, reflecting a strong partnership in managing vocational education risks.

Private sector involvement is significantly influenced by risk-sharing mechanisms, with 100% of respondents acknowledging that such frameworks attract more private sector investment. However, while 65.6% agree that financial risk-sharing models are in place, 33.3% indicate the need for improvement, and 9% disagree, suggesting gaps in financial risk management. Furthermore, a lack of clarity is evident, as there were 0% responses for the statement on whether risk-sharing mechanisms between public and private sectors are clearly defined. Overall, the data suggests that while Rwanda has a well-established risk mitigation strategy and strong public-private partnerships in vocational education, there is a need for better-defined financial risk-sharing models and continuous evaluation to enhance their effectiveness.

The findings indicate strong confidence in the Monitoring and Evaluation (M&E) framework for vocational education in Rwanda. 100% of respondents agree that the framework is well-structured and comprehensive, demonstrating broad support for its design and organization. Additionally, 96.8% confirm that M&E processes are conducted regularly to assess vocational training effectiveness, though 3.2% express concerns about consistency. A key strength of the framework is its impact on program improvement, as 100% of respondents strongly agree that evaluation results are actively used to enhance vocational education. Furthermore, 100% acknowledge that the framework includes clear indicators for measuring success, ensuring that performance metrics are well defined and aligned with program goals. Stakeholder engagement presents an area for potential enhancement. While 65.6% agree that stakeholders actively participate in M&E processes, 33.3% also agree but indicate a need for stronger involvement, with 1.1% undecided and 9% disagreeing. This suggests that while stakeholder inclusion is generally positive, there is room to increase engagement and collaboration. On the positive side, 100% of respondents agree that the M&E system provides accurate and timely data for decision-making, reinforcing confidence in data reliability. Overall, the M&E framework is perceived as well-established, effective, and capable of driving continuous improvements in vocational education, though further efforts may be needed to enhance stakeholder involvement.

The findings highlight the significant role of stakeholder engagement in vocational education planning, implementation, and evaluation in Rwanda. 95.7% of respondents strongly agree that stakeholder participation is integrated into the planning process, emphasizing the importance of early involvement in program development. Additionally, 97.8% acknowledge that local communities and industries enhance the relevance of vocational education, reinforcing the value of collaboration in ensuring programs meet real-world needs. However, perceptions of government-private sector collaboration are mixed, with 62.4% agreeing, 34.4% moderately agreeing, and 3.2% disagreeing, suggesting that efforts to strengthen these partnerships may be needed. Encouragingly, 100% of respondents strongly agree that stakeholder feedback is incorporated into program improvements, indicating a well-established feedback loop in vocational education. In terms of continuous stakeholder engagement, 95.7% agree that regular consultations are conducted to align vocational education with labor market demands, although 2.2% remain undecided and 2.2% disagree, pointing to potential gaps in engagement. Additionally, 100% strongly agree that educational institutions collaborate with businesses and industries, demonstrating a high level of cooperation between education providers and the private sector. While 65.6% believe that stakeholder engagement helps align vocational training with job market skills, 9% disagree, suggesting that while engagement exists, its effectiveness in bridging skill gaps could be further strengthened. Lastly, 100% strongly agree that stakeholders, including employers and community representatives, play an active role in assessing vocational education outcomes, reinforcing their vital contribution to shaping and refining these programs. Overall, while stakeholder engagement is well-integrated, there is room for improvement in government-private sector partnerships and aligning vocational skills more precisely with labor market needs.

Conclusion

The study findings indicate that vocational education in Rwanda is strongly supported by key frameworks, including public-private partnerships, legal and regulatory structures, monitoring and evaluation (M&E) mechanisms, and stakeholder engagement. The legal and regulatory framework emerged as the most significant predictor of vocational education enhancement, highlighting the importance of well-structured policies, student protection measures, accreditation processes, and private sector involvement. While public-private partnerships and M&E frameworks also play a crucial role, their impact varies, suggesting that continuous improvements in these areas could further strengthen vocational training programs. Additionally, stakeholder engagement is a critical factor in ensuring the relevance, quality, and sustainability of vocational education. Strong collaborations between educational institutions, industries, and local communities have contributed to the development of market-driven programs. However, challenges remain in areas such as government-private sector collaboration, financial risk-sharing mechanisms, and aligning vocational skills with labor market demands. Addressing these gaps through policy adjustments, increased investments, and enhanced evaluation strategies will be essential in ensuring that vocational education continues to drive skills development, employment, and economic growth in Rwanda.

Recommendations

Improve the adaptability of legal frameworks to better respond to the evolving needs of vocational education. Enhance policy implementation strategies to ensure that government policies are effectively enforced and yield desired outcomes. Strengthen mechanisms that align vocational education with labor market demands by conducting regular reviews and industry consultations.

Develop clearer and well-defined financial risk-sharing models to encourage sustainable private sector investment. Increase transparency in risk-sharing agreements between the government and private institutions to enhance accountability and effectiveness. Continuously evaluate and refine risk-sharing mechanisms to address emerging financial and operational challenges in vocational education. Ensure consistency in M&E processes by increasing the frequency of assessments and strengthening compliance measures. Enhance stakeholder involvement in M&E activities to create a more inclusive and participatory evaluation system. Leverage digital technologies to improve data collection, accuracy, and real-time decision-making for vocational education improvements.

Foster stronger collaboration between the government, industries, and local communities to align vocational education with market needs. Implement structured platforms for regular stakeholder consultations to ensure their contributions shape policy and curriculum development. Address gaps in government-private sector partnerships by introducing targeted initiatives that encourage more active participation from private stakeholders.

Areas for further studies

Further research could examine how specific aspects of Rwanda's legal and regulatory framework directly influence the quality, accessibility, and success of vocational education programs. This could involve a deeper dive into policy implementation challenges and the relationship between legal provisions and outcomes like student enrollment, graduation rates, and employment. While risk-sharing mechanisms are widely regarded as effective, a detailed study on the financial models in place would be beneficial. Research could explore the sustainability and scalability of financial risk-sharing mechanisms, particularly focusing on how financial risks are distributed between public and private sector partners.

Although stakeholder engagement is seen as critical, its long-term impact on the relevance and quality of vocational programs requires further exploration. Future studies could track the outcomes of stakeholder-driven reforms and collaborations over a period of time to assess whether these engagements lead to improved labor market alignment and program effectiveness. While the private sector is heavily involved in vocational education, further research could examine the specific barriers hindering more widespread and deeper private sector participation. This could include financial, logistical, and regulatory challenges that businesses face when partnering with vocational education institutions.

With the rapidly changing global and local workforce, studies could explore how adaptable Rwanda's legal and regulatory frameworks are in addressing new vocational skills needs, such as those emerging from technological advancements or shifts in the global economy. This study could also assess the framework's ability to accommodate innovative vocational education models like online and hybrid learning. Although Rwanda's M&E systems for vocational education have been identified as well-structured, more research is needed on their practical impact. A deeper investigation could assess how data collected through M&E processes is used to inform decision-making and drive continuous improvement in vocational education.

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