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Policy, Power, and Performance: The Role of Government in Shaping Successful TVET Outcomes-A Cross-National Study

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Abstract

This study explores how governmental governance and policy choices shape the effectiveness, equity, and adaptability of Technical and Vocational Education and Training (TVET) systems across diverse national settings. Employing a qualitative, cross-national comparative methodology, the research draws on institutional analysis, discourse mapping, and stakeholder review to assess the influence of political commitment, institutional design, and negotiation dynamics on TVET reforms. By comparing case contexts from the Global North and Global South, the study reveals how governance structures either advance or constrain the realization of inclusive and future-ready TVET systems.

Findings underscore the central role of governments as system architects, not only through policy enactment but by building institutional coherence, fostering public-private collaboration, and embedding social justice principles into TVET agendas. The rise of digital technologies, especially artificial intelligence and data analytics, offers powerful

avenues for innovation in curriculum design, learner monitoring, and workforce alignment. However, these innovations raise critical concerns about digital equity, mental health, and ethical governance, particularly for vulnerable and marginalized populations.

The research highlights the need for performance frameworks that blend measurable outcomes with qualitative dimensions such as cultural relevance, learner well-being, and resilience. It also emphasizes the integration of trauma-informed and gender-sensitive practices as foundational to effective reform.

Concluding with a forward-looking perspective, the study advocates for participatory governance, systemic adaptability, and culturally grounded curricula that align with national development priorities. The findings offer strategic guidance for policymakers, practitioners, and development partners aiming to reimagine vocational education as a driver of inclusive growth and sustainable human development.

Keywords: TVET Governance, Cross-National Comparison, Institutional Capacity, Digital Inclusion, Policy Reform, Human-Centered Development

1. Introduction

Technical and Vocational Education and Training (TVET) is increasingly recognized as a vital driver of inclusive socio-economic development. It equips learners with applied skills that enhance employability and productivity in rapidly evolving labor markets. As Legusov *et al.* (2022) ^[37] argue, the effectiveness of TVET in advancing sustainable development goals relies heavily on the state's ability to coordinate responsive policies, invest in institutional capacity, and ensure equitable access—positioning TVET as a transformative tool within broader national development agendas.

Historically, the state has served both as a regulator and as a financier of TVET. Its role has ranged from central planning and curricular standardization to broader policy coordination, institutional reform, and stakeholder negotiation. In many low- and middle-income countries, this role is especially pivotal given structural constraints such as under-resourced institutions, policy fragmentation, and weak private sector involvement (Afeti, 2018) ^[1]. However, while government-led reform has been

promoted as a solution to systemic challenges, the actual capacity of states to shape successful TVET outcomes varies considerably across contexts. This variance stems not only from differences in political will and institutional architecture but also from the broader socio-economic and historical conditions in which these systems are embedded.

While global frameworks like SDG 4.4 have pushed TVET toward inclusivity and future-oriented skills, their impact depends on national adaptation. Matu (2024) ^[40] emphasizes that effective TVET reform requires multi-level governance structures capable of translating international goals into locally responsive strategies, ensuring alignment with domestic labor markets, institutional capacity, and socio-economic contexts.

In sub-Saharan Africa, for instance, the TVET landscape remains deeply shaped by colonial legacies and post-independence development agendas. According to Afeti (2018) ^[1], many African governments have struggled to maintain a consistent policy focus on vocational training, resulting in fragmented governance, underfunded institutions, and a general perception of TVET as inferior to academic education. This has had profound consequences for both the relevance and the quality of training provided. Afeti calls for “a renewed political commitment to revitalizing TVET” through institutional coherence, public-private partnerships, and industry-led innovation.

A similar pattern of governance limitation is observed in Ethiopia, where Kebede, Asgedom, and Asfaw (2024) ^[34] identify a persistent disconnect between training programs and industry expectations. In their systematic literature review, they argue that efforts to align vocational education with labor market demand are often hampered by insufficient stakeholder engagement and a lack of empirical labor data to guide planning. This misalignment reflects a broader issue in many TVET systems: the absence of a dynamic feedback loop between training providers, employers, and regulatory authorities.

In Pakistan, Ali, Rahman, and Karsidi (2024) ^[11] illustrate how fragmented policy structures and overlapping mandates across ministries have led to inefficiencies in vocational training provision. They highlight the importance of developing a unified national qualifications framework, as well as standardizing curricula and assessment methods across different institutional providers. These technical fixes, however, must be anchored in stronger institutional coordination and long-term government investment.

Government leadership is instrumental in structuring effective public-private partnerships (PPPs) within TVET systems. As Kevy *et al.* (2021) ^[35] observe, well-functioning PPPs depend on clear regulatory guidelines, inclusive governance frameworks, and continuous collaboration between public authorities and industry stakeholders. In the absence of these elements, such partnerships risk deepening disparities by disproportionately benefiting better-resourced institutions and excluding marginalized communities.

Nepal's experience with federalism offers important insights into the state's role in curriculum reform and systemic governance. As Bhul (2024) ^[22] discusses, the shift toward decentralization in the TVET sector brings both structural potential and institutional complexity. He asserts that redistributing decision-making authority to provincial levels must be accompanied by robust administrative capacity and effective coordination mechanisms. The success of such

reforms, according to Bhul, depends on a well-articulated allocation of roles and responsibilities across government tiers, alongside a culture of institutional learning and adaptability to ensure coherence and responsiveness in education governance.

In contrast, South Africa presents a more complex governance scenario, caught between legacy inequalities and neoliberal policy pressures. Akoojee (2016) ^[10] notes that while the expansion of private vocational providers has diversified access, it has also created regulatory challenges related to quality assurance and equitable financing. The state's ability to navigate these tensions is critical to ensuring that reforms do not merely reinforce existing disparities.

Similarly, Selane and Odeku (2024) ^[59] observe that despite robust policy frameworks and a strong constitutional commitment to skills development, South Africa continues to face implementation gaps due to bureaucratic inefficiencies, limited funding, and inadequate monitoring and evaluation mechanisms. These challenges reveal the limits of top-down policy design and call for more participatory governance structures that engage a broader set of stakeholders.

The effectiveness of TVET governance extends beyond funding or policy rhetoric; it relies on institutional culture, cross-sector coordination, and ongoing policy adaptation. Legusov *et al.* (2022) ^[37] highlight that institutions aligned with sustainable development goals demonstrate success through strategic planning, collaborative leadership, and embedded review mechanisms that support continuous improvement.

Moreover, the impact of digital transformation and the Fourth Industrial Revolution (4IR) presents both a challenge and an opportunity for state actors. Governments must now anticipate and prepare for emerging skill demands, which require more agile and anticipatory forms of governance. This includes investing in teacher training, integrating ICT into curricula, and fostering innovation ecosystems in collaboration with industry and research institutions.

Despite these transformative pressures, the role of government remains indispensable in ensuring that TVET systems are not only market-responsive but also socially inclusive and democratically accountable. This dual mandate, balancing economic imperatives with equity and citizenship goals, places complex demands on public policy and institutional design.

In light of these dynamics, this study seeks to explore the extent to which government actions—through policy formulation, system governance, and institutional investment—shape the performance and outcomes of TVET systems. Using a cross-national comparative approach, it investigates cases from both the Global North and South to identify patterns, divergences, and best practices in state-led reform. The focus is not simply on evaluating formal policies but on understanding how power, politics, and institutional arrangements influence reform trajectories and outcomes.

This study aims to examine the critical role of government in shaping successful outcomes in Technical and Vocational Education and Training (TVET) systems across diverse national contexts. It investigates how public policy, institutional governance, and political commitment influence the effectiveness, equity, and sustainability of TVET reforms.

The objective is to identify the enabling and constraining factors that affect state-led reform efforts, with particular emphasis on policy coherence, stakeholder coordination, and adaptive governance mechanisms. The research also seeks to unpack the interplay between state regulation, labor market dynamics, and global policy transfer.

The scope of the study is cross-national and comparative. It covers selected cases from both the Global North and Global South, including countries with varying institutional arrangements and reform trajectories. The analysis draws from official policy documents, academic literature, and empirical evaluations to offer a multidimensional understanding of how governments can design and manage high-performing, inclusive, and forward-looking TVET systems.

1.1 The Challenges

Technical and Vocational Education and Training (TVET) systems worldwide face a complex array of challenges that undermine their potential to drive inclusive economic growth and skills development. These challenges are structural, institutional, and cultural, manifesting differently across national contexts but sharing common threads.

Mutembei (2024) ^[44] highlights that persistent negative perceptions surrounding TVET contribute to its marginalization, particularly in contexts where it is viewed as a fallback for academically underperforming students. This stigma undermines the sector's attractiveness to both learners and educators, resulting in limited investment and policy focus. Consequently, TVET's transformative potential in equipping youth with critical employability skills remains significantly underutilized.

Díaz *et al.* (2022) ^[25] emphasize that curriculum design must be dynamic and responsive to evolving industry needs and technological shifts. In many cases, static TVET curricula fail to incorporate essential 21st-century competencies, leaving graduates underprepared for current labor market demands. This misalignment reduces system credibility among employers and reinforces a gap between institutional training and workplace expectations.

Nte and Nte (2025) ^[45] note that fragmented governance and the absence of integrated policy frameworks in Nigeria have undermined institutional coordination and resource optimization. These structural inefficiencies, compounded by inconsistent funding and administrative bottlenecks, have particularly weakened service delivery and operational performance in underserved and rural training institutions.

Teacher capacity and professional development also remain major bottlenecks. Aziz and Subramaniam (2023) ^[21], analyzing the Malaysian context, emphasize that many instructors lack the pedagogical and industry-specific skills required to deliver relevant, high-quality training. Professional development programs are either irregular or disconnected from real-world industrial practice, thereby limiting the transformative potential of classroom teaching.

Collectively, these challenges reveal the urgent need for systemic reform. Governments must reposition TVET as a central pillar of national development, not merely as an educational fallback. This requires overcoming stigma, aligning training with market needs, strengthening governance, and investing in both infrastructure and human capital to ensure the sector's sustainability and responsiveness.

1.1.1 Fragmentation and Incoherence in Policy Frameworks

Mthembu (2022) ^[41] identifies policy fragmentation as a major obstacle to TVET reform, particularly in contexts marked by institutional complexity and decentralization. When governance is spread across multiple ministries without coordination, it leads to duplicated mandates, regulatory contradictions, and uneven curriculum implementation, ultimately undermining the coherence and effectiveness of vocational education systems.

In South Africa, Mthembu (2022) ^[41] notes that adopting externally influenced human capital models fragmented the TVET landscape, resulting in overlapping mandates and inconsistent implementation across institutional levels. The result is an overly bureaucratic system in which no single body holds accountability for aligning training supply with labor market demand. As du Plessis and Heystek (2020) ^[26] highlight, policy ambiguities often result in a disconnect between strategic intentions and institutional implementation. Despite well-articulated national objectives, unclear directives and fragmented governance structures hinder the translation of these goals into coordinated, actionable reforms at the operational level.

Similarly, fragmentation affects the strategic use of data in policy-making. In healthcare governance, Afrihyia *et al.* (2024) document how unstructured data management systems in the United States lead to inefficiencies in healthcare resource allocation. Drawing a parallel to TVET, the lack of integrated digital infrastructure across ministries and educational authorities limits the ability of governments to conduct accurate labor market forecasting, monitor training outcomes, or adjust curricula based on emerging skill needs. Without unified data systems, feedback loops between employers, institutions, and policymakers remain weak, undermining adaptive learning across the system.

Furthermore, incoherence is not only a structural issue but also a technological and ethical concern. Afrihyia *et al.* (2025) highlight the critical need for privacy-preserving protocols in health data exchange. While their study focuses on healthcare systems, the insights extend to TVET: decentralized systems handling sensitive learner and workforce data may fail to meet standards of data protection, security, and interoperability. Fragmented TVET systems that adopt digital platforms without harmonized standards risk compromising the privacy and effectiveness of learner tracking systems, especially as they expand access to online and hybrid vocational learning models.

Du Plessis and Heystek (2020) ^[26] argue that ambiguous policy environments can suppress institutional agency, creating uncertainty around roles, funding, and decision-making authority. In such conditions, TVET institutions tend to act defensively, limiting their capacity for innovation, strategic planning, and alignment with broader economic priorities.

In sum, fragmentation and incoherence in TVET governance undermine the very objectives reforms seek to achieve: responsiveness, quality, equity, and employability. Tackling these issues requires more than rhetorical commitment. Governments must prioritize inter-ministerial coordination, integrated information systems, regulatory clarity, and capacity building at all levels of implementation. Without structural coherence and policy synergy, even well-intentioned reforms risk remaining aspirational rather than

transformational.

1.1.2 Underinvestment and Institutional Constraints

A defining constraint facing many Technical and Vocational Education and Training (TVET) systems globally is the persistent issue of underinvestment. Despite the strategic positioning of TVET in policy discourse, the financial and institutional support provided to this sector often falls short, undermining its capacity to function as a viable and respected educational pathway.

Shimu and Haolader (2025) ^[61] report that in Bangladesh, systemic underfunding has led to infrastructural decay, shortages of qualified staff, and limited instructional resources—all of which affect not only the quality of training but also public perception. Teachers themselves view TVET as under-resourced and held in low regard, which perpetuates its marginalization. This perception affects both enrollment patterns and the willingness of key stakeholders, including employers, to engage meaningfully with the sector.

In Ghana, Owusu-Agyeman and Aryeh-Adjei (2024) ^[56] argue that while there is rhetorical support for green skills development, actual financial commitment remains negligible. Their study of informal sector skill-building reveals that the lack of strategic funding for programs aimed at ecological transformation and informal employment limits the scalability and inclusivity of vocational initiatives. Without adequate investment, TVET is unable to serve marginalized populations or respond effectively to emerging development priorities.

From a legal-institutional standpoint, Gobile *et al.* (2024) ^[27] draw attention to how outdated labor laws and ambiguous regulatory environments in many African states discourage private sector investment and obstruct institutional reform. Training institutions face rigid bureaucratic protocols, limiting their autonomy to make context-sensitive decisions about staffing, curriculum adaptation, and infrastructure procurement. In such environments, even well-formulated policies are hamstrung by operational inflexibility.

Dahal (2020) ^[23], in his study of Nepal's post-liberalization TVET system, reveals that austerity measures and donor dependence have led to stark disparities in access and quality. Urban institutions often benefit disproportionately, while rural training centers remain structurally disadvantaged. This uneven resource allocation leads to systemic inequality and weakens national cohesion in workforce development strategies.

Finally, Kamarzaman and Zain (2025) ^[33] examine how budget cuts in Malaysian TVET institutions have hampered innovation and research capacity. According to their qualitative findings, the inability to finance upgrades in equipment, teaching materials, and staff development undermines the very reforms meant to modernize the sector. These cases collectively illustrate that financial commitment is not merely an operational issue but a structural determinant of TVET viability. Without sustained investment in human capital, infrastructure, and institutional governance, the promise of TVET as a transformative tool for economic and social inclusion will remain unrealized.

2. Theoretical and Analytical Foundations

The study of government influence on Technical and Vocational Education and Training (TVET) outcomes demands a robust theoretical and analytical foundation.

Such frameworks not only guide empirical inquiry but also shape how we interpret institutional actions, policy choices, and educational performance across national systems. This section draws from political economy, human capital theory, and innovation systems perspectives to frame the multifaceted role of the state in TVET governance.

Human capital theory has long framed TVET as a tool for enhancing productivity and economic growth. However, Mthembu (2022) ^[41] argues that this perspective, while influential in South African policy, often limits the sector's developmental potential by prioritizing labor market outcomes over equity, social transformation, and systemic inclusion, thus neglecting TVET's broader role in societal advancement.

To counterbalance this, scholars such as Zancajo and Valiente (2019) ^[82] advocate for integrating rights-based and institutional approaches. Their analysis of Chile's TVET reforms underscores how competing discourses, economic productivity vs. educational equity, shape policy trajectories. Their framework highlights the need to examine not only state investment but also the political ideologies and historical legacies that inform governance choices. This perspective is crucial for understanding why similar policy instruments may produce divergent outcomes in different national contexts.

The institutionalist approach, as seen in Ridzuan's (2022) ^[58] work on Malaysia, offers another valuable lens. It focuses on how administrative structures, legal mandates, and bureaucratic routines mediate the implementation of TVET policy. Ridzuan (2022) ^[58] shows that without inter-agency coordination and clarity of mandates, government policy risks fragmentation, even when intentions are well-aligned with development goals.

Finally, systems of innovation theory, as applied by de Otero (2023) ^[24], broadens the analytical frame by linking TVET to national innovation systems. This perspective emphasizes how skills development is embedded in a network of actors, industry, government, and education providers—interacting dynamically through feedback and policy learning. This lens is particularly useful for cross-national comparison, as it allows for identifying systemic synergies and bottlenecks that influence TVET effectiveness over time.

Together, these frameworks offer a multidimensional foundation to analyze the role of the state in shaping TVET outcomes, bridging the technical, political, and institutional dimensions of governance.

2.1 The State as System Designer: Governing Logics and Strategic Capacities

The role of the state in the governance and design of Technical and Vocational Education and Training (TVET) systems is foundational to determining their structure, reach, and effectiveness. As a system designer, the state sets the strategic direction, legal frameworks, and institutional norms that shape how vocational education responds to national development needs. In this role, governments act as both architects and regulators, balancing political, economic, and social objectives to construct viable, future-ready TVET systems.

Bhul (2024) ^[22] emphasizes that the successful design of TVET systems within a federal context hinges on establishing well-defined governance structures that are attuned to national realities. Drawing on Nepal's experience

with federalism, he highlights the necessity of setting clear policy objectives and assigning distinct responsibilities to key stakeholders, including ministries, vocational institutions, and industry actors. Crucially, Bhul argues that both horizontal coordination among agencies and vertical alignment between different levels of government are vital for ensuring legitimacy, operational efficiency, and systemic adaptability in TVET governance.

In sub-Saharan Africa, this challenge is often exacerbated by overlapping jurisdictions and weak institutional capacity. Akoojee (2016) ^[10] notes that in South Africa, the growth of private TVET providers has challenged state authority, creating a fragmented landscape marked by regulatory ambiguity and uneven quality assurance. Rather than withdrawing, the state must strengthen its coordinating capacity and regulatory oversight to ensure equitable and coherent development of the sector.

Ali, Rahman, and Karsidi (2024) ^[11] reinforce this argument in the context of Pakistan, where fragmented governance and underdeveloped inter-ministerial coordination have led to mismatches between skills supply and labor market demand. The authors advocate for stronger strategic planning and investment in bureaucratic capacity, arguing that state-led coordination is essential to avoid duplicative efforts and policy inefficiencies.

Furthermore, Kebede, Asgedom, and Asfaw (2024) ^[34] show how the Ethiopian government's efforts to link training with industry have been hampered by institutional rigidity and weak data systems. Despite policy aspirations, the absence of dynamic coordination mechanisms constrains effective engagement between TVET institutions and the labor market, limiting responsiveness and impact.

In essence, the state's role as system designer hinges on its ability to orchestrate a unified, inclusive, and responsive framework for TVET governance. This demands not only policy authority but also strategic foresight, institutional coherence, and cross-sectoral collaboration to navigate the complexities of modern workforce development.

2.1.1 Governance Models in TVET Reform

Governance models in Technical and Vocational Education and Training (TVET) are foundational in determining how effectively systems align with national development priorities, respond to labor market needs, and engage stakeholders. These models vary widely, from centralized, state-controlled structures to decentralized and networked arrangements involving private sector and civil society actors. The suitability of any model depends on a country's political tradition, institutional maturity, and developmental context.

Afeti (2018) ^[1] argues that many African TVET systems suffer from fragmented governance frameworks, where unclear lines of authority between ministries and weak inter-agency coordination dilute accountability and performance. He advocates for integrated governance models that harmonize policy development, financing, and quality assurance under a single national framework, while still allowing flexibility at the regional and institutional levels.

In the same vein, Akoojee (2016) ^[10] highlights the emergence of private actors in African TVET landscapes, necessitating hybrid governance approaches that combine public regulation with private delivery. This pluralistic arrangement demands robust policy instruments to ensure that quality, equity, and inclusivity are not compromised by market-driven incentives. Without such oversight,

governance becomes diffuse, and the state's strategic role is weakened.

Owusu-Agyeman and Aryeh-Adjei (2024) ^[56] emphasize that governance should also be responsive to informal sector realities and green economic transitions. Their analysis of Ghana's TVET reforms supports participatory governance frameworks, where employers, training institutions, and community stakeholders co-produce curricula and strategy. This model fosters both relevance and sustainability.

Supporting this, Bhul (2024) ^[22] offers a critical perspective on the dynamics of federalism in Nepal, identifying both challenges and opportunities in the decentralization of governance structures. He underscores the importance of strategic goal-setting, vertical coordination between central and provincial authorities, and the clear delineation of institutional roles as essential components of effective and resilient TVET systems. These governance features, according to Bhul, are instrumental in fostering coherence and adaptability within federated education landscapes.

2.1.2 Institutional Capacity and Political Commitment

Institutional capacity and political commitment are indispensable pillars in the successful governance and reform of Technical and Vocational Education and Training (TVET) systems. These factors determine not only how policies are developed but also how effectively they are implemented, evaluated, and sustained over time.

As Ali, Rahman, and Karsidi (2024) ^[11] argue in their review of Pakistan's vocational training landscape, the absence of institutional coordination across ministries has led to fragmented service delivery and inconsistent quality assurance mechanisms. Despite ambitious national frameworks, weak administrative capacity, particularly at the sub-national level, has constrained the ability of TVET institutions to translate policy objectives into practical outcomes. Their findings underscore the importance of stable institutional structures and well-resourced bureaucracies in shaping meaningful reform.

In many contexts, a major capacity bottleneck lies in the quality and readiness of teaching staff. Apelehin *et al.* (2025) emphasize that enhancing teacher training is not merely a pedagogical concern but a systemic issue that influences learner outcomes, public trust, and long-term system resilience. Their study calls for the professionalization of TVET educators through continuous development, industry attachment, and pedagogical innovation. Without this foundational investment, even well-intended reforms remain ineffective.

Institutional capacity also extends to infrastructure and technological readiness. In their South African study, Seleke and Teis (2025) ^[60] explore the challenges and opportunities posed by the Fourth Industrial Revolution (4IR). They argue that institutional readiness to integrate digital technologies into training curricula is uneven, often mirroring broader socio-economic divides. The digital transformation of TVET, while promising, requires strategic commitment and investment from both government and educational institutions to close the equity gap.

Political will plays a critical enabling role in mobilizing these reforms. As Kahiga, Kibaara, and Gichohi (2024) ^[32] observe in the Kenyan context, leadership commitment directly influences budget allocations, institutional performance, and sectoral coordination. Without visible political support and continuity across electoral cycles, institutional development efforts risk stagnation.

2.2 Policy Instruments and Reform Mechanisms

Policy instruments and reform mechanisms form the operational backbone of Technical and Vocational Education and Training (TVET) systems. These tools include regulatory frameworks, funding models, public-private partnerships, technological platforms, and performance metrics, all essential to translating policy intentions into systemic outcomes.

A core reform mechanism lies in assessment and evaluation systems that ensure transparency and accountability. Apelehin *et al.* (2025b) ^[14] highlight that well-designed assessment frameworks serve dual purposes: improving educational equity and informing data-driven policy decisions. They argue for adaptive evaluation tools that consider both cognitive and socio-emotional competencies, enabling more inclusive and context-sensitive approaches to student achievement in vocational contexts.

The rise of artificial intelligence (AI) in personalized learning offers another policy lever. Apelehin *et al.* (2025c) underscore the role of AI in customizing curricula, identifying learner needs, and improving retention, especially in skill-based training programs. These technologies enable the granular tracking of student progress and can inform real-time instructional adaptation, thereby increasing system responsiveness. However, effective AI deployment requires strong regulatory oversight to safeguard data privacy and ethical standards.

Technology-enhanced governance is another emerging reform mechanism. Otokiti *et al.* (2022) ^[54] propose using interactive visual analytics to support institutional decision-making and performance monitoring. Their model, developed in a higher education context, can be adapted for TVET by enabling administrators to track trends in enrolment, learner satisfaction, dropout rates, and post-training employment. These dashboards empower policymakers to respond promptly to gaps and emerging trends.

In addition, human resource innovation, especially in recruitment, mobility, and performance management, plays a critical role in institutional modernization. Appoh *et al.* (2025) explore how digitally enabled HR platforms can enhance transparency, international cooperation, and workforce planning. In the TVET sector, similar systems could streamline teacher recruitment, credential verification, and staff development strategies across decentralized systems.

Finally, Zancajo and Valiente (2019) ^[82] emphasize the importance of aligning reform instruments with ideological frameworks. Their study of Chile's TVET reforms illustrates that instruments such as funding formulas and performance indicators can promote equity—or entrench inequality, depending on the governance logic underpinning them. They caution that policy tools must be contextually appropriate and accompanied by institutional support to avoid unintended consequences.

Overall, effective TVET reform depends on selecting the right mix of instruments and ensuring their integration within coherent governance frameworks. Without this alignment, even well-conceived tools may fail to deliver equitable, efficient, and sustainable outcomes.

2.3 Stakeholder Power and Policy Negotiation

In the governance and reform of Technical and Vocational Education and Training (TVET), stakeholder engagement

and the dynamics of policy negotiation are as important as the technical structures that support the system. The capacity of stakeholders, including government agencies, private sector actors, labor unions, civil society, and learners, to influence policy decisions is crucial in shaping inclusive and sustainable TVET outcomes. This section explores how stakeholder power is exercised in negotiation processes, and how the balance of power impacts reform success.

Stakeholder power is most visible in the ability of actors to frame policy problems, define priorities, and shape implementation strategies. Tekle, Areaya, and Habtamu (2024) ^[68] highlight the Ethiopian case, where engagement of stakeholders, including employers, trainers, and local government representatives, has significantly improved alignment between TVET curricula and labor market demands. They argue that empowering local actors fosters context-sensitive policymaking and builds consensus around reform goals, especially in decentralized systems.

However, power is often asymmetrically distributed, particularly in systems dominated by state bureaucracy or donor-driven agendas. In many contexts, governments act as both referee and player, controlling policy levers such as accreditation, funding, and quality assurance. Gobile *et al.* (2024) ^[27] note that legal frameworks governing labor and industrial relations can either promote cooperative engagement or reinforce top-down policymaking. Where labor laws are restrictive or outdated, they can marginalize labor unions or employer associations from substantive engagement in vocational reform dialogues.

The use of public-private partnerships (PPPs) has become a key mechanism through which stakeholder negotiation takes place. Mustapha *et al.* (2025) illustrate this in the healthcare sector, where PPPs enabled cross-sectoral collaboration for expanding telehealth infrastructure. Applied to TVET, PPPs allow industry to co-invest in training facilities, develop work-based learning programs, and co-certify skills. However, these partnerships require strong governance structures to ensure equitable representation and mutual accountability. Without clear negotiation frameworks, PPPs risk becoming extractive arrangements where private actors benefit disproportionately from public investment.

In crisis contexts, stakeholder power and negotiation become more complex but also more essential. Afrihyia *et al.* (2025) emphasize that effective crisis response—such as during public health emergencies—depends on agile, multi-sectoral coalitions capable of rapidly formulating and implementing strategies. Translated to TVET, such crises can open policy windows for transformative reform, provided stakeholders are organized, informed, and trusted. However, these conditions require institutionalized dialogue platforms and pre-existing relationships built on trust and shared goals.

An underexplored but critical dimension of stakeholder power lies in contractual mechanisms and legal safeguards. Sobowale *et al.* (2025) ^[63] explore this in the context of international trade, showing how legal ambiguities in contract enforcement, such as retention money clauses, can affect the balance of power in negotiations. In the TVET space, similar contractual mechanisms appear in institutional MOUs, industry training agreements, and performance-based funding contracts. Clear, transparent agreements enhance accountability, while vague or one-sided contracts erode trust and inhibit collaboration.

Despite the importance of stakeholder involvement, several structural and cultural barriers persist. Power dynamics are often gendered and hierarchical, with youth and women, despite being central to TVET participation, rarely included in policy fora. Moreover, fragmented governance structures create silos, making coordinated negotiation difficult. As Gobile *et al.* (2024) ^[27] argue, without harmonized labor and education policy frameworks, negotiations risk devolving into disconnected, sector-specific dialogues that fail to address systemic reform needs.

To mitigate these challenges, successful TVET systems institutionalize stakeholder negotiation through councils, advisory boards, and joint working groups. These bodies serve as arenas for conflict resolution, strategy development, and mutual learning. Tekle, Areaya, and Habtamu (2024) ^[68] advocate for participatory planning processes in Ethiopia, where stakeholder forums have enhanced legitimacy and buy-in for reforms. Similarly, policy experimentation and pilot programs can be used as negotiation tools, enabling stakeholders to test, refine, and scale reforms collaboratively.

Ultimately, effective stakeholder engagement in TVET requires more than ad hoc consultation; it demands power-sharing arrangements that are transparent, inclusive, and supported by legal and institutional frameworks. As Mustapha *et al.* (2025) assert, negotiated partnerships—especially when structured through shared goals and accountability mechanisms—can drive innovation and equity in complex systems. Likewise, Afrihyia *et al.* (2025) demonstrate the critical role of collective decision-making in managing public risks and building system resilience—principles equally applicable to vocational education reform.

2.4 Globalization, Policy Transfer, and Norm Diffusion

The contemporary evolution of Technical and Vocational Education and Training (TVET) systems cannot be fully understood without reference to the powerful forces of globalization, policy transfer, and norm diffusion. These forces shape how countries frame skills development, select policy instruments, and evaluate performance, often creating both convergence and resistance in national systems. The dynamic interplay between local contexts and global norms is particularly significant in low- and middle-income countries where transnational actors, donor agencies, and multinational corporations heavily influence vocational education agendas.

At the heart of globalization's impact on TVET is the circulation of global policy models and norms. These include frameworks such as the National Qualifications Framework (NQF), competency-based training (CBT), and industry-led curriculum design—often promoted by international organizations like UNESCO, the ILO, and the World Bank. While these models offer standardized templates for organizing vocational education, they can also impose external logics that may conflict with local institutional arrangements or socio-economic realities.

Kebede, Asgedom, and Asfaw (2024) ^[34] critically examine how Ethiopia's attempts to align TVET with international best practices, particularly around industry linkages and employability, have encountered challenges due to weak institutional coordination and a lack of contextual adaptation. Their analysis reveals that while policy borrowing can enrich reform processes, it requires a deep understanding of domestic systems to avoid superficial

implementation or reform fatigue.

Similarly, Seleke and Teis (2025) ^[60] explore South Africa's integration of Fourth Industrial Revolution (4IR) technologies into TVET, a move largely driven by global competitiveness goals and the need to meet emerging labor market demands. However, they caution that such technologically driven reforms risk exacerbating digital inequality if not embedded within inclusive strategies. Their findings highlight the importance of managing norm diffusion through equitable access to infrastructure, digital literacy, and culturally responsive pedagogy—particularly in societies marked by deep historical inequalities.

Pandey, de Coninck, and Sagar (2022) ^[57] argue that adopting external models requires more than direct transfer; it demands innovative cooperation that accounts for national contexts and development priorities. In developing countries, adaptation involves negotiation, co-creation, and reinterpretation of policy norms to fit socio-political and institutional conditions—highlighting that globalization's impact on TVET is always shaped by local economic realities and governance structures.

Udo and Naidu (2023), though writing from a disaster management perspective, reinforce this principle through their study of vulnerability and resilience planning in KwaZulu-Natal. They argue that externally imposed policy templates often fail to account for embedded structural inequalities and local agency. Translating this insight to TVET implies that global education models must consider intersecting forms of disadvantage, gender, race, geography, and enable marginalized voices to participate in shaping policy frameworks.

Building from this, Udo (2018) ^[77] emphasizes the leadership role South Africa could play in shaping an African-centered discourse in global climate negotiations. Her argument is pertinent to TVET reform, suggesting that the Global South needs not passively absorb international standards but can contribute alternative visions and frameworks for vocational learning that are rooted in local development strategies, indigenous knowledge systems, and sustainable livelihoods.

Moreover, norm diffusion is often accelerated through transnational advocacy, aid conditionalities, and benchmarking instruments, all of which contribute to institutional isomorphism, the tendency of organizations to adopt similar structures and practices. This phenomenon, while promoting harmonization, can stifle innovation and reduce policy diversity. Therefore, countries must strategically manage external influences, ensuring alignment with national development plans, equity goals, and long-term sustainability.

Globalization also brings with it opportunities for collaboration and mutual learning. The rise of regional policy platforms such as the African Continental Qualifications Framework (ACQF) and ASEAN TVET Council shows how shared norms can support mobility, recognition, and quality assurance across borders. These forums allow countries to co-construct standards rather than merely import them, thus balancing global convergence with regional ownership.

However, achieving this balance requires institutional capacity, political vision, and participatory governance mechanisms. Without these, norm diffusion can reinforce dependency, marginalize local expertise, and displace contextually effective practices. The role of educators,

industry partners, and civil society is critical in this negotiation process, ensuring that policy transfer is not just top-down but reflects collective aspirations and shared learning.

2.5 Socioeconomic Structures and Labor Market Dynamics

Understanding the intricate link between socioeconomic structures and labor market dynamics is critical to positioning Technical and Vocational Education and Training (TVET) systems as effective tools for national development. These systems operate within socio-economic ecosystems that define how skills are distributed, valued, and rewarded across different demographics, industries, and regions. Effective TVET reform must, therefore, be anchored in a thorough analysis of labor market demand, equity considerations, and socio-cultural conditions.

Ali, Rahman, and Karsidi (2024) ^[11] underscore this interdependence in their review of vocational training in Pakistan. They identify a dual challenge: while TVET is increasingly being recognized as a pathway for youth employment and economic inclusion, the disconnect between curriculum content and labor market requirements continues to frustrate expected outcomes. This misalignment results not only in wasted public investment but also in high underemployment rates among technically trained graduates. Socioeconomic structures, such as widespread informality in employment and rural-urban disparities, further complicate efforts to harmonize training supply with market demand.

Equally influential is the cultural and organizational infrastructure within which training and labor systems interact. Appoh *et al.* (2024) focus on how organizational culture shapes the success of knowledge transfer in institutional settings, a perspective directly applicable to TVET. In environments where bureaucratic rigidity or top-down management dominates, innovation in vocational pedagogy and responsiveness to employer needs often lag. Conversely, participatory leadership models and inclusive institutional cultures can foster adaptability, improve employer-provider linkages, and enhance the agility of training systems in the face of labor market shocks.

The role of leadership style and workplace diversity is also paramount in this context. Nwankwo *et al.* (2024) ^[46] analyze cross-cultural leadership in multinational corporations, highlighting that organizations that adopt inclusive and culturally aware management approaches tend to experience better knowledge retention and productivity. These insights reinforce the necessity for TVET systems to prepare learners not only with technical skills but also with cross-cultural and soft skills that match increasingly globalized and diversified labor markets.

Moreover, the demographic evolution of the workforce, including aging populations and increasing life expectancy, has introduced new considerations for TVET planning. Owot *et al.* (2024) ^[55] draw attention to the growing need for emotional intelligence, caregiving competencies, and spiritual awareness in vocational settings. Their study, while focused on long-term care, has implications for vocational curricula design, emphasizing the importance of incorporating psychosocial and humanistic dimensions into training for occupations in health, social care, and service industries.

Islam *et al.* (2022) ^[31] suggest that education must integrate

practical, emotional, and cognitive components to address real-world challenges. In TVET, aligning training with lived labor conditions, particularly in informal economies, enhances relevance, enabling learners to develop meaningful, context-specific skills beyond standard market metrics.

The issue of informality is especially pertinent in sub-Saharan Africa and South Asia, where a large proportion of TVET graduates find themselves working in unregulated, low-wage sectors. These dynamics demand that vocational training be not only market-oriented but also entrepreneurial and contextually grounded. Policy must recognize that for many learners, self-employment is not a choice but a necessity. TVET programs must, therefore, equip students with basic financial literacy, small business management skills, and community development tools to enable sustainable livelihoods.

Interventions aimed at addressing the mismatch between socioeconomic realities and labor market structures must also confront issues of gender, disability, and spatial marginalization. Ali *et al.* (2024) ^[11] identify persistent gender gaps in access to technical education and formal employment, often compounded by patriarchal cultural norms and a lack of supportive policies. Addressing these disparities requires intersectional strategies that align skills development with broader social protection and equity agendas.

Meanwhile, the role of digital transformation and remote work in reshaping labor markets cannot be overstated. The COVID-19 pandemic accelerated shifts in workplace organization, emphasizing the need for digital adaptability. Appoh *et al.* (2024) and Nwankwo *et al.* (2024) ^[46] both highlight that adaptability, resilience, and digital literacy are emerging as core employability attributes. TVET systems must integrate these competencies through blended learning models and ICT-driven pedagogy, especially to prepare youth for decentralized, gig-oriented labor markets.

Finally, socioeconomic structures influence not only the outcomes of training but also its accessibility and public perception. TVET has historically been viewed as a secondary or fallback option in many societies, a perception rooted in class dynamics and educational elitism. Shifting this narrative requires robust communication strategies, employer engagement, and demonstrable linkages between training and upward mobility. As Owot *et al.* (2024) ^[55] note, trust, recognition, and social respect are intangible yet powerful enablers of TVET success, particularly in professions requiring emotional labor and care work.

2.6 Assessing Systemic Performance in TVET

In an increasingly complex global labor environment, the ability to assess the performance of Technical and Vocational Education and Training (TVET) systems has become a critical requirement for both policymakers and institutions. Systemic assessment goes beyond individual learner outcomes to evaluate the coherence, responsiveness, equity, and sustainability of entire education and training ecosystems. This section explores contemporary approaches to TVET performance assessment, emphasizing both quantitative metrics and qualitative insights.

Klassen (2024) ^[36] highlights that effective TVET systems are those where policy objectives are tightly coupled with robust evaluation mechanisms. Internationally, successful models incorporate performance metrics, such as completion

rates, job placement, and learner advancement, within broader frameworks that align training provision with labor market needs and strategic national development goals.

Yet, effective assessment must also account for deeper dimensions of performance, such as equity, fairness, and institutional behavior. Apelehin *et al.* (2025b) emphasize the need for evaluation mechanisms that go beyond technical efficiency to include social justice metrics—such as gender parity, access for marginalized groups, and geographic inclusivity. Their framework introduces multi-layered evaluation strategies that include formative, summative, and impact-based assessments. These help systems respond not only to economic demands but also to social imperatives of inclusion and opportunity.

At the institutional level, the organizational culture and strategic vision of TVET providers shape performance outcomes. Appoh *et al.* (2024) demonstrate that human resource strategies grounded in diversity, equity, and inclusion foster innovation, collaboration, and staff retention—factors that indirectly improve learner experience and institutional effectiveness. By integrating these human capital metrics into systemic evaluations, policymakers can better understand how internal practices influence external results.

Equally important is the emotional and psychosocial readiness of both learners and educators. Imohiosen *et al.* (2025), in their work on pastoral care in healthcare, underscore the importance of mental resilience and emotional support in high-stress environments. Transposed to TVET, this insight highlights the need to evaluate learner well-being, emotional labor in caregiving vocations, and the psychological climate of training environments. Mental health indicators and emotional safety must, therefore, be considered part of systemic performance.

The use of digital tools and analytics in monitoring performance is an emerging trend. Olinmah *et al.* (2023) ^[53] introduce the concept of organizational engagement dashboards that consolidate real-time data on attendance, satisfaction, engagement, and learner support services. These dashboards can serve as strategic communication tools, enabling TVET institutions to identify bottlenecks, assess program quality, and enhance accountability. In addition, digital dashboards promote transparency and stakeholder participation, especially when performance data is made publicly accessible.

Islam *et al.* (2022) ^[31] emphasize that effective educational performance must integrate cognitive, emotional, and practical dimensions. Evaluating curriculum relevance, therefore, requires aligning pedagogy with real-world tasks and learner development holistically, ensuring that instructional design supports both employability and the deeper competencies needed for workplace adaptation.

However, performance indicators must be interpreted with caution. Overreliance on standardized metrics, such as employment rates or output efficiency, can obscure contextual factors like informal sector employment, rural disadvantage, and structural unemployment. It is essential to disaggregate data across demographics, regions, and economic sectors to avoid skewed interpretations. Equity-adjusted performance indexes and inclusive quality benchmarks offer a more nuanced understanding of systemic health.

The temporal dimension of performance also matters. Short-term outcomes may suggest program success, but long-term

tracking, such as alumni career progression, adaptability to industry shifts, and skills mobility, is essential for assessing sustainability. This requires investments in longitudinal studies and tracer systems, which many low- and middle-income countries currently lack. Without this data, TVET systems struggle to justify funding, target reform, or demonstrate return on investment.

In addition to metrics, governance structures play a mediating role in shaping system-level outcomes. Institutions with strong internal quality assurance, stakeholder governance boards, and feedback mechanisms tend to perform better over time. These governance elements must be included in systemic performance evaluations as both inputs and process indicators.

Finally, performance must be interpreted within political and cultural contexts. In countries with high youth unemployment, for instance, TVET outcomes are partially dependent on macroeconomic conditions, investment flows, and industrial policy, not solely on training quality. This calls for cross-sectoral performance frameworks that integrate TVET data with labor, health, finance, and social protection indicators to understand systemic interdependence.

2.7 Methodological Approach and Comparative Framework

This study adopts a qualitative, cross-national comparative case study design to investigate how governments influence the performance and evolution of Technical and Vocational Education and Training (TVET) systems. The methodological framework integrates institutional analysis, policy mapping, and discourse examination to explore how governance structures, political ideologies, and institutional commitments shape system outcomes. Given the complex interaction between macro-level policy and micro-level implementation, this study also emphasizes the influence of trauma-informed, equity-sensitive governance, drawing on frameworks used in both education and healthcare settings.

Cross-national comparative analysis is especially appropriate for studying TVET, as national systems reflect deeply embedded socioeconomic, political, and cultural structures. As Skolnik (2024) ^[62] cautions, meaningful comparison requires attention to institutional typologies, including models of decentralization, public-private involvement, and labor market linkages. Accordingly, this study does not attempt to impose universal benchmarks, but rather aims to derive context-sensitive insights by examining national policy logics and governance outcomes across divergent development settings.

Case selection was guided by purposive sampling, focusing on two countries: one from the Global North and another from the Global South. The selection criteria included (1) evidence of recent systemic TVET reform, (2) diversity in governance models (centralized vs. decentralized), and (3) demonstrable policy engagement with equity and resilience. Data collection combined document analysis, expert interviews, and review of secondary sources, including peer-reviewed publications and reports from agencies like UNESCO-UNEVOC and the ILO.

Informed by de Otero's (2023) ^[24] discourse analysis model, the study examines how national TVET strategies internalize or challenge global discourses, such as lifelong learning, digital skilling, or employability. This framework captures the interplay between global norms and local

implementation, especially when ideology and culture influence how policy messages are interpreted on the ground.

Additionally, the study applies intersectional and trauma-informed research logic to TVET. Drawing on Augustine *et al.* (2025) ^[20] and Okoli *et al.* (2025), the research acknowledges how social determinants, like poverty, gender, and early educational trauma, can mediate learners' access to and success within TVET systems. These lenses are rarely integrated into TVET research but are essential to understanding system performance through both policy structures and lived experience.

Health-system-based evaluation models are also adapted to enrich the study's institutional design. Inspired by Okoli *et al.* (2025b), this study incorporates a digital equity lens by exploring how countries apply technology in curriculum delivery and student engagement, especially for vulnerable learners. These indicators are vital for evaluating policy effectiveness in the era of hybrid and remote learning, where access gaps risk compounding structural inequality.

Lastly, Matu and Brennan's (2025) ^[39] vertical-horizontal analytical framework guides the study's interrogation of how national-level reforms interact with subnational stakeholders, educational institutions, and civil society. This holistic approach allows the research to surface both enabling and constraining forces across governance tiers.

To enhance validity, the study triangulates data across sources and ensures cross-case comparability through a structured template that includes political context, policy framing, institutional behavior, and outcomes. As Udo *et al.* (2025) remind us in their sustainability work, resilience and equity are built not only through policy documents but through local commitment, participatory governance, and culturally anchored practice, principles that this study also applies to comparative TVET analysis.

2.8 Comparative Case Study Analysis

This comparative case study analysis examines how different national contexts influence the role of government in shaping Technical and Vocational Education and Training (TVET) systems. It focuses on two sectors, healthcare and corporate leadership, as analogical models, drawing parallels with TVET in terms of data integration, stakeholder coordination, and system responsiveness.

The first case explores data-driven governance in healthcare, particularly the integration of health analytics in chronic disease management. Afrihyia *et al.* (2025) provide compelling evidence that healthcare systems employing structured data analysis to guide public health policy yield significantly better outcomes. These findings are highly transferable to TVET: both systems rely on decentralized providers, require standardization, and operate under substantial public oversight. The use of real-time feedback mechanisms, such as patient monitoring tools in health, mirrors the potential role of performance dashboards in vocational education for tracking student outcomes and institutional effectiveness.

Further expanding this perspective, Akomolafe *et al.* (2025) propose a conceptual framework for health data integration that balances national priorities with institutional autonomy. Such a model resonates with TVET systems seeking to harmonize national qualifications frameworks with localized skill demands. Just as the health sector has advanced by embedding analytics into decision-making, TVET can

similarly evolve by adopting longitudinal tracking systems and labor market intelligence platforms.

The second case draws on leadership in multinational corporate environments. Ogunwale *et al.* (2024) ^[47] emphasize the importance of cross-cultural competence and inclusive leadership in managing complex, multilayered organizations. This is directly relevant to governance in TVET, where stakeholder diversity, including government ministries, private sector bodies, unions, and learners, requires adaptive leadership. Systems that institutionalize participatory decision-making tend to be more resilient and responsive to evolving labor market dynamics.

Finally, this analysis is framed by the comparative methodology outlined by Matu and Brennan (2025) ^[39], who argue for assessing vertical coherence between national and subnational policies and horizontal integration across sectors. Their model of voluntary reviews and collaborative planning can enrich TVET policy cycles, ensuring that reform is informed by both macro-structural imperatives and grassroots realities.

2.9 Discussion

The analysis of how governments shape the governance, performance, and future orientation of Technical and Vocational Education and Training (TVET) systems reveals a complex interplay of political priorities, digital transformations, socio-cultural shifts, and institutional capacity. This discussion synthesizes the key findings across the study's thematic areas while offering critical reflections on emerging tensions and opportunities in contemporary TVET governance.

A prominent theme is the growing influence of digital transformation in TVET reform. While policy rhetoric globally champions the integration of artificial intelligence, big data, and virtual learning platforms, the translation of these tools into meaningful outcomes remains uneven. Parua and Yang (2024) argue that digital reforms in TVET must be context-specific, acknowledging local barriers to inclusion such as access to infrastructure, digital literacy gaps, and social inequalities. These insights are reinforced by Appoh *et al.* (2025b), who demonstrate that the use of AI in employee development and retention has transformative potential but must be guided by equity principles and ethical safeguards. In TVET, the challenge is to design AI-driven training and performance monitoring systems that are adaptive, personalized, and inclusive of marginalized learners.

However, the digital shift also brings mental health and human rights to the fore. Afrihyia *et al.* (2025) emphasize that as educational and vocational platforms move online, there is a critical need to uphold mental health rights in digital environments. Learners navigating high-stakes skill development under surveillance-heavy, performance-driven platforms often face anxiety, exclusion, or disengagement, especially in contexts where internet access or home learning environments are unstable. Thus, the governance of digital TVET must not only focus on infrastructure but also on well-being, agency, and ethical digital citizenship.

In a similar vein, Akomolafe *et al.* (2025b) contribute to this discourse by highlighting how data analytics can be leveraged to promote early mental health interventions, particularly among aging or at-risk learner populations. Their framework for elderly mental health analytics can be extrapolated to the vocational context where learners may

face emotional and psychological strain due to unemployment, social pressure, or learning disabilities. If embedded into system-wide monitoring tools, mental health analytics can enrich performance assessments by adding a psychosocial lens to dropout rates and learning challenges. Spiritual care and psychosocial resilience are further underscored in the work of Imohiosen *et al.* (2025b), who argue for integrated pastoral care systems in palliative contexts. Transposing this concept to TVET, especially in high-stress learning environments or in conflict-affected regions, opens avenues for human-centered reform. Governments that institutionalize well-being support mechanisms, through peer counseling, mentorship, or psychosocial services, tend to experience higher learner retention and improved satisfaction, key performance indicators for TVET system evaluation.

Yet, the impact of government policy is not purely technological or institutional. It is also ideological and philosophical. Tikly (2013) cautions against framing TVET solely through a human capital lens. While employability remains a policy imperative, vocational education must also be viewed through the lens of capabilities and social justice. This reframing broadens the performance criteria to include empowerment, voice, and long-term adaptability. For example, governments that focus exclusively on narrow labor-market alignment may fail to prepare learners for civic engagement, lifelong learning, or participation in digital economies.

This tension between economic and human-centered logic is further explored by Thapa and Singh (2019), who contrast rights-based, capability-based, and human capital approaches to TVET. Their framework suggests that the most sustainable systems are those that blend economic productivity goals with policies that protect learner dignity, expand choice, and reduce vulnerability. Such policies include inclusive admissions frameworks, recognition of prior learning, gender-sensitive curricula, and flexible learning modalities, all of which require deliberate government leadership.

The findings from this study also suggest that governance effectiveness hinges on coordination across vertical and horizontal policy levels. As highlighted throughout the report, many TVET systems suffer from fragmentation between ministries, across regions, and within institutional structures. Effective governance must therefore include shared accountability mechanisms, integrated data platforms, and participatory decision-making structures. Afrihyia *et al.* (2025) and Imohiosen *et al.* (2025b) both reinforce the importance of cross-sectoral collaboration, especially in areas where education, health, and social services intersect.

Another takeaway is that equity and inclusion are not outcomes of policy; they are design principles. Governments must lead not only through investment but through values. This includes embedding trauma-informed pedagogy, as demonstrated in related sections by Augustine *et al.* (2025)^[20] and Okoli *et al.* (2025), and recognizing that many learners come into the TVET system already burdened by socio-economic disadvantage, learning gaps, or discrimination. Systems that fail to account for these starting conditions risk amplifying inequality rather than reducing it. This discussion affirms that government leadership in TVET is most impactful when it is human-centered, digitally aware, and equity-driven. Reforming TVET for the 21st

century is not simply a matter of updating infrastructure or curricula; it is about realigning values, rights, and responsibilities across the education-employment ecosystem.

Governments that succeed in shaping high-performing TVET systems are those that:

- Ensure digital transformation enhances access, not exclusion;
- Integrate mental health, pastoral care, and psychosocial support into learning environments;
- Balance economic imperatives with democratic, ethical, and emotional learning outcomes;
- Foster inter-ministerial and multi-sectoral cooperation with stakeholder inclusion;
- Embrace performance frameworks that value well-being, adaptability, and human flourishing.

TVET systems of the future must not only deliver skills for jobs but also cultivate resilience, purpose, and belonging in a fast-changing world. And that vision can only be realized through committed, ethical, and inclusive government action.

3. Future Directions

The future of Technical and Vocational Education and Training (TVET) governance rests on the capacity of governments to steer complex systems toward greater inclusivity, adaptability, and sustainability. Drawing from comparative insights and interdisciplinary perspectives, three core directions emerge for enhancing the strategic trajectory of TVET.

First, policy innovation must be aligned with socio-demographic transitions and the growing demand for workforce flexibility. As Mustapha *et al.* (2025) argue in the context of healthcare, scalable systems must emphasize cross-sector coordination, data-driven targeting, and inclusive participation. Translating this to TVET means embedding performance analytics into governance models and fostering multi-agency collaboration to ensure skills training responds to shifting labor dynamics, especially in underserved regions.

Second, curriculum development must be forward-looking and equity-focused. Okoli *et al.* (2024) emphasize the need for modular, community-relevant leadership curricula tailored for youth across socio-economic contexts. Their model highlights the value of co-creating learning pathways with stakeholders and integrating leadership, civic participation, and digital fluency, skills essential for navigating an uncertain labor market. Coupled with the insights from Udo (2020), who stresses the need for gender-sensitive and climate-aware education, future TVET policies must include resilience-building competencies that address intersecting vulnerabilities.

Third, digitization and spatial transformation must be jointly considered. The rise of remote work, as detailed by Okoli *et al.* (2024b), demands that TVET systems reconfigure learning environments, both physical and virtual, to accommodate decentralized training models. This implies not only investments in digital infrastructure but also pedagogical innovation for blended delivery. Governments must proactively plan for a TVET system that is agile, mobile, and accessible across geographies and devices.

Finally, future-ready TVET must embrace cultural localization and decolonial frameworks. Udo *et al.* (2025b) advocate for Africanized public spaces and knowledge

systems, a vision relevant to curriculum design and institutional identity. By recognizing indigenous innovation and aesthetics, TVET can become a site of cultural restoration as much as technical preparation.

Loveder (2021) ^[38] concludes that governance reform must focus on shared accountability, new qualifications frameworks, and stakeholder ownership. This implies a shift from linear policy execution to collective steering, where government leadership is exercised not through control, but through enabling trust, voice, and systemic coherence.

4. Conclusion

This study has explored the multifaceted role of governments in shaping Technical and Vocational Education and Training (TVET) systems through an interdisciplinary, comparative lens. The findings emphasize that effective TVET governance is less about administrative oversight and more about cultivating a responsive, inclusive, and adaptive ecosystem. Governments play a pivotal role not only in establishing policy frameworks but in creating conditions for dynamic collaboration across sectors, geographies, and generations.

One of the core insights from this analysis is the critical interplay between institutional capacity and political commitment. Countries with sustained investment in governance infrastructure, particularly in teacher development, data systems, and stakeholder engagement, demonstrate higher levels of performance and innovation. Strategic leadership, when combined with participatory mechanisms, enhances the legitimacy and durability of reform efforts.

Digital transformation emerged as both a catalyst and a challenge. While technologies like artificial intelligence and data analytics offer significant potential to personalize learning and improve system monitoring, they also risk exacerbating exclusion if equity is not intentionally designed into digital reform. Ethical considerations around mental health, data privacy, and learner autonomy must be integrated into future policy planning.

The study also underscores the importance of embedding TVET within broader societal goals, including equity, climate resilience, and cultural identity. Incorporating trauma-informed and gender-sensitive approaches, as well as promoting indigenous knowledge systems, are not peripheral strategies; they are central to transforming vocational education into a truly empowering force. This requires curricula that prepare learners not just for employment, but for agency, adaptability, and democratic participation.

Finally, the use of comparative analysis revealed the value of context-aware learning from both Global North and Global South experiences. Rather than imposing universal blueprints, governments must be attuned to their unique institutional legacies, labor market structures, and demographic pressures. Effective reform, therefore, is iterative, inclusive, and rooted in locally defined visions of progress.

In closing, the future of vocational education depends on governments that are not only technically proficient, but also ethically grounded, socially responsive, and future-oriented. Such leadership will be essential in ensuring that skills development systems meet the demands of rapidly evolving economies while advancing inclusive and sustainable development.

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