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Public–Private Partnerships in Vocational Education and Training: Toward Efficient Governance and Enhanced Performance

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Abstract:

This article synthesizes two decades of research on public–private partnerships (PPPs) in vocational education and training (VET) to clarify how, and under what conditions, PPPs enhance institutional governance and performance. Anchored in New Public Governance and performance-based management, the study develops an integrative framework that links three core PPP mechanisms—contract governance, inclusive stakeholder participation, and balanced risk-sharing—to governance outcomes (transparency, accountability, curriculum–industry alignment) and performance outcomes (graduate employment, employer satisfaction, program renewal speed, and efficiency). A systematic narrative review of 47 peer-reviewed and institutional studies published between 2000 and 2023 spans Africa, Asia, Europe, and the Americas. Evidence indicates that PPPs are positively associated with improved relevance and employability when employers co-design curricula and substantial work-based learning is institutionalized, and when contracts specify clear objectives, measurable outputs, independent audits, and credible dispute-resolution provisions. Effects are contingent on contextual moderators: regulatory quality, legal enforceability, funding stability, and digital capacity consistently strengthen the governance–performance link, while narrow KPI regimes, weak oversight, and exclusion of local actors can produce equity trade-offs or encourage measurement gaming. The review contributes an evidence-informed conceptual model, an evidence map of thematic incidence, and testable hypotheses to guide future empirical work. Policy implications emphasize designing PPPs as coherent bundles that align incentives with public value, institutionalize inclusive governance, and embed proportionate evaluation systems that combine quantitative and qualitative indicators. The article concludes by outlining a research agenda focused on longitudinal and quasi-experimental designs, standardized efficiency metrics, and distributional analyses.

Keywords: Public–private partnerships; Vocational education and training; Governance; Contract governance; Risk-sharing; Stakeholder participation; Employability; Performance management; New Public Governance; TVET.
Classification JEL: H11, H52, I28, P27
Paper type : Theoretical Research

1. Introduction

Over the past three decades, public–private partnerships have shifted from a niche procurement device for capital-intensive infrastructure to a broadly deployed policy instrument in human-capital development, including vocational education and training (Marty & Voisin, 2006; Rowe et al., 2018). This diffusion reflects convergent pressures on VET systems: accelerating technological change, persistent skills mismatches, fiscal constraints, and demands for tighter alignment between curricula and labor-market needs. In this landscape, PPPs promise to mobilize private capabilities—investment, managerial know-how, and real-time information on occupational standards—while preserving public stewardship of equity, quality, and long-term system goals (Almarri & Boussabaine, 2017; Torres & Pina, 2001). Yet the record is neither uniform nor uncontested. Advocates emphasize responsiveness, innovation, and cost-sharing; critics warn about opacity, accountability gaps, and mission drift when education is managed through complex, performance-linked contracts (Hartwich et al., 2020; Abdallah, 2021).

Conceptually, PPPs in VET can be read through two complementary lenses. The first is New Public Governance, which recasts public service delivery as a collaborative enterprise linking government, employers, unions, training providers, and civil society in networks of co-production and joint problem-solving (Osborne, 2006). From this vantage point, effective PPPs are not merely contractual exchanges but institutional arrangements that enable relational coordination and horizontal accountability across organizations (Hooge, 2015). The second is performance-based management, which stresses measurable outputs and outcomes, the design of incentive regimes, and the use of monitoring systems to ensure that public objectives are met (Bouckaert & Halligan, 2008). In VET, this approach has motivated the adoption of key performance indicators (KPIs), scorecards, and evaluation protocols that track graduate employment, employer satisfaction, and cost efficiency while seeking to safeguard quality and inclusion (Gamboa et al., 2013; Oswald-Egg & Renold, 2021).

The interface between these lenses is where much of the contemporary debate sits. Contract design matters because incentives shape behavior, particularly when tasks are multidimensional and outcomes are only partially observable (Martimort & Pouyet, 2008). Empirical studies in education PPPs increasingly highlight the salience of "contract governance" as a determinant of success (Helmy et al., 2020; Latif et al., 2023). At the same time, collaborative inclusion matters: mixed boards and advisory councils that grant employers, unions, and local actors a formal voice tend to accelerate curriculum renewal and deepen work-based learning, reducing the distance between the classroom and the workplace (Ridzuan & Rahman, 2022; Rowe et al., 2018). The challenge for policy is to assemble these elements into a coherent bundle that advances public value while leveraging private strengths.

Despite a growing body of case studies and policy evaluations, knowledge gaps persist. First, findings are fragmented across contexts and PPP types, making it difficult to generalize beyond single programs or countries. Indicator heterogeneity is pervasive: measures of "employment," "quality," and "efficiency" vary widely, complicating cross-study comparison and attenuating the prospects for meta-analytic synthesis (Pike & Graunke, 2015; Azevedo et al., 2012). Second, efficiency claims are often under-specified: few studies benchmark unit costs consistently or estimate returns on investment in ways that account for baseline quality or selection effects (Abbott & Doucouliagos, 2000; Du, 2008). Third, equity effects remain insufficiently theorized and measured, even though concerns about selective intake and tracking arise when providers face tight KPI regimes and budget constraints (Muller, 2009; Abdallah, 2021).

This article addresses these gaps in three ways. It first articulates a conceptually integrated framework that traces plausible pathways from PPP mechanisms—contract governance, stakeholder inclusion, and balanced risk-sharing—to governance outcomes and performance, while specifying contextual moderators such as regulatory quality and funding stability (Osborne, 2006; Bouckaert & Halligan, 2008; Martimort & Pouyet, 2008). It then conducts a systematic narrative review of forty-seven studies spanning regions and methods, organizing evidence around the proposed mechanisms and outcomes to identify regularities and boundary conditions (Rowe et al., 2018; Gamboa et al., 2013). Finally, it formulates hypotheses suitable for future empirical testing, emphasizing measurable constructs that travel across settings. The guiding research question is straightforward: to what extent, and under what conditions, do PPPs improve the governance and performance of vocational training institutions? By answering it, the article contributes to a more cumulative science of PPPs in VET, one that treats partnerships not as a generic cure-all but as a configurable set of instruments whose effectiveness hinges on design choices and institutional context.

2. Literature Review

The scholarship on public–private partnerships (PPPs) in vocational education and training (VET) has expanded markedly over the last two decades, paralleling the diffusion of partnership instruments from infrastructure-heavy sectors into human-capital policies (Marty & Voisin, 2006; Rowe et al., 2018). Across diverse national settings, studies converge on the promise of PPPs to sharpen responsiveness to labor-market needs, share costs and risks, and introduce managerial know-how; yet they also warn of tensions around accountability, transparency, and equity in systems with a public-service mission (Hartwich et al., 2020; Abdallah, 2021). This review synthesizes that literature under three themes: evolving conceptualizations of PPPs in VET; governance architectures, stakeholder engagement, and contractual design; and performance evidence, including the conditions under which PPPs translate into improved outcomes.

2.1 Evolving conceptualizations of PPPs in VET: from NPM to networked governance

Early accounts cast PPPs as long-term contracts that bundle design, finance, build, and operation tasks, transferring a defined set of risks to private partners in exchange for performance commitments (Marty & Voisin, 2006; Almarri & Boussabaine, 2017). In education and training, this contractual logic is applied not only to facilities but to program development, work-based learning, and career services, blurring procurement boundaries and extending private involvement into core pedagogical functions (Demotes-Mainard et al., 2006; Rowe et al., 2018). Conceptually, this shift sits at the crossroads of New Public Management (NPM), with its focus on output controls and incentives, and newer governance paradigms that foreground collaborative, multi-actor coordination (Osborne, 2006; Bouckaert & Halligan, 2008).

The move from NPM's principal–agent lens toward New Public Governance (NPG) and network governance reframes PPPs as "relational contracts" embedded in inter-organizational networks where value creation hinges on trust, joint problem-solving, and horizontal accountability (Popova, 2022; Dzhurylo, 2022). In VET, this implies that employer associations, sectoral bodies, unions, and civil society complement public authorities and providers as co-governors of curricula, assessment, and quality assurance (Hooge, 2015; Arribas, 2016). Rather than discrete, time-bound projects, PPPs in training increasingly resemble portfolios of co-produced services and dual-learning pathways, often linked to regional innovation strategies and industrial policy (Meer et al., 2017; Barr & Attrey, 2017).

Performance thinking has evolved in parallel. While NPM inspired the adoption of key performance indicators (KPIs), scorecards, and incentive regimes (Martimort & Pouyet, 2008), subsequent work argues for balanced frameworks that capture social outcomes, employer satisfaction, and capability building—not merely throughput or short-term cost metrics

(Bouckaert & Halligan, 2008; Gamboa et al., 2013). Studies of African and Asian PPP programs, for example, couple placement rates with indicators of inclusion and system learning, reflecting a broadened conception of "public value" in VET (Alba & Stucki, 2019; Alba & Stucki, 2021). Digitalization and competency-based education have further stretched the PPP concept: partnerships now often cover platform development, data infrastructure, and micro-credential ecosystems, intertwining public objectives with private technology strategies (Yusvana, 2025; Tsarova, 2024).
A common thread across these strands is the recognition that PPP effectiveness is not intrinsic to the contract form but contingent on institutional settings—legal frameworks, regulator capacity, and stakeholder voice—and on the alignment between contractual instruments and the coordination problems they are meant to solve (Torres & Pina, 2001; Osborne, 2006; Kryshchenko, 2024). The literature thus pushes beyond definitional disputes toward a configurational view: PPPs are governance bundles combining finance, control, learning, and relational components that must be tailored to sectoral and regional contexts (Marty, 2013; Remington & Marques, 2020).

2.2 Governance architectures, stakeholder engagement, and contractual design

Empirical studies consistently show that governance structures mediate the relationship between PPP adoption and institutional performance. Mixed boards and advisory councils with employer representation help align curricula with occupational standards, speed up program refresh cycles, and improve the quality of work-based learning placements (Hooge, 2015; Ridzuan & Rahman, 2022; Towip et al., 2021). Where these bodies include unions and local businesses, they can also anchor equity and territorial embeddedness, tempering the risk of mission drift toward narrow firm-specific needs (Arribas, 2016; Edokpolor & Imafidon, 2019). At the same time, governance risks loom large. Information asymmetries, weak monitoring, and diffuse accountability can enable regulatory capture or erode transparency, especially when complex service bundles are contracted to a small set of providers (Gianfaldoni & Rostaing, 2012; Muller, 2009). Comparative work in Southeast Asia and North Africa identifies "contract governance" as a critical success factor—encompassing clarity of objectives, measurable outputs, credible sanctions and rewards, dispute-resolution mechanisms, and auditability (Helmy et al., 2020; Sajida & Kusumasari, 2023). A quantitative study in Malaysia offers evidence that robust contract governance is positively associated with PPP project performance, even if it does not always moderate the effects of broader success factors such as leadership commitment and stakeholder communication (Latif et al., 2023).
Risk-sharing design is equally pivotal. The public side typically retains regulatory and political risks, while private partners assume performance and, in some cases, demand risk; misalignment here can produce perverse incentives that prioritize easily measured outputs over learning quality or inclusion (Martimort & Pouyet, 2008; Abdallah, 2021). Studies of dual training adaptations underline how thoughtful partitioning of pedagogical and operational risks—coupled with co-financing arrangements—supports stable employer engagement without offloading public responsibilities for access and standards (Remington, 2018; Rashidi, 2015). Importantly, legal frameworks that codify these principles, clarify rights and responsibilities, and mandate transparent procurement and monitoring are repeatedly linked to better governance quality (Radkevych, 2024; Вороніна-Пригодій, 2024).
Context also matters for how governance is enacted. Case studies from Cameroon, Indonesia, and Nigeria point to the salience of relational factors—trust among actors, leadership continuity, and the presence of boundary-spanning roles—in sustaining partnerships through policy cycles and staffing changes (Fornyuy, 2025; Helmy, 2014; Olabiyi et al., 2022). Conversely, policy inconsistency and exclusion of local actors frequently undermine implementation, regardless of formal design (Samara, n.d.; Muzari, 2023).

2.3 Performance evidence: outcomes, trade-offs, and contextual moderators

On outcomes, the literature reports generally positive associations between PPP participation and measures of relevance and employability, though effect sizes and durability vary. Cross-country and country-specific studies describe higher job placement rates, stronger employer satisfaction, and better alignment of competencies with sectoral demand when employers co-design curricula and co-deliver training (Gamboa et al., 2013; Oswald-Egg & Renold, 2021; Bhatt et al., 2024). Evidence from African development partnerships finds gains in accessibility and inclusion when PPPs explicitly target disadvantaged groups and leverage multi-sector finance, though many initiatives remain early-stage (Alba & Stucki, 2019; Alba & Stucki, 2021). Evaluations of dual and industry-based programs in Europe, Asia, and the U.S. cite improved transition-to-work indicators and innovation spillovers, particularly where regional actors co-ordinate to match training to emerging specializations (Remington, 2018; Barr & Attrey, 2017; Towip et al., 2021).

Yet these benefits are not automatic. Several studies highlight trade-offs: narrow KPI regimes may bias providers toward short-term throughput, crowding out investments in foundational and transferable skills; cost pressures can translate into selective recruitment or program tracking that disadvantages vulnerable learners (Fernández, 2014; Houdret & Bonnet, 2016). Project-level reports also flag staff turnover and challenges in institutionalizing knowledge transfer as threats to sustainability, especially in North–South partnerships where expatriate expertise is not sufficiently anchored in local systems ("Knowledge Transfer through Public–Private…," 2023; Melesse et al., 2022). Financial efficiency results are mixed: while some cases document reduced unit costs or better resource utilization, return-on-investment metrics and cost–benefit analyses remain uneven, limiting cross-case comparability (Abbott & Doucouliagos, 2000; Du, 2008; Wang, 2022).

Methodologically, the corpus is hampered by indicator heterogeneity, limited counterfactual designs, and scarce longitudinal follow-up, making it difficult to isolate PPP effects from selection and funding baseline differences (Pike & Graunke, 2015; Azevedo et al., 2012). Calls for more rigorous designs—difference-in-differences, propensity-score matching, or natural experiments—are widespread, alongside proposals to complement placement and wage metrics with social return on investment (SROI) and capability measures (Carriou & Jeger, 1997; Gamboa et al., 2013).

Despite these caveats, the literature points to several moderators of PPP effectiveness. Regulatory quality and contract enforceability consistently strengthen links between partnership intensity and outcomes, as do monitoring frameworks with independent audits (Radkevych, 2024; Вороніна-Пригодій, 2024). Stakeholder inclusion—particularly of SMEs, unions, and local governments—improves program relevance and equity, while sustained government commitment and predictable financing underpin scalability (Arribas, 2016; Dzhurylo, 2022; Alba & Stucki, 2021). Finally, digital transformation strategies embedded in PPPs appear to amplify effects on access and adaptability, provided they are coupled with capacity building for instructors and robust data governance (Tsarova, 2024; Yusvana, 2025; Ali et al., 2024).

Taken together, these findings support a contingent governance perspective: PPPs can enhance the governance and performance of vocational training institutions (VTIs) when contractual instruments, collaborative structures, and evaluation regimes are coherently aligned with public value objectives and local labor-market dynamics. Conversely, misalignment—between KPIs and pedagogy, risk allocation and public obligations, or legal frameworks and enforcement capacity—tends to produce weak or regressive effects.

Hypotheses

- **H1 (Governance effect):** The intensity of PPP involvement in VTIs is positively associated with governance quality (transparency, stakeholder participation, horizontal accountability), net of institutional size and funding baseline (Hooge, 2015; Ridzuan & Rahman, 2022; Edokpolor & Imafidon, 2019).

- **H2 (Contract governance mechanism):** The relationship between PPP involvement and VTI performance outcomes (graduate employment, employer satisfaction, program renewal speed) is mediated by contract governance quality—clarity of objectives, measurable outputs, monitoring, and dispute-resolution provisions (Helmy et al., 2020; Latif et al., 2023; Sajida & Kusumasari, 2023).
- **H3 (Risk-sharing alignment):** Balanced risk-sharing (public retention of regulatory risk; private assumption of performance/operational risk) strengthens the positive effect of PPPs on performance, compared with misaligned or opaque risk allocations (Martimort & Pouyet, 2008; Abdallah, 2021).
- **H4 (Regulatory moderation):** The positive effect of PPPs on performance is stronger in environments with high regulatory quality and enforceable legal frameworks than in low-capacity contexts (Radkevych, 2024; Kryshchenko, 2024; Arribas, 2016).
- **H5 (Equity safeguard):** Equity safeguards and inclusive stakeholder representation attenuate potential negative associations between financially weighted KPIs and access outcomes for disadvantaged learners (Fernández, 2014; Houdret & Bonnet, 2016; Alba & Stucki, 2019).

3. Methodology

This study employed a systematic narrative review to synthesize conceptual and empirical knowledge on public–private partnerships (PPPs) in vocational education and training (VET), with a particular focus on governance arrangements and performance outcomes. A systematic narrative approach was selected because it combines transparent, reproducible searching and screening with interpretive synthesis suited to heterogeneous evidence bases spanning policy analyses, case studies, and quantitative evaluations (Grant & Booth, 2009; Snyder, 2019). Reporting followed core principles from PRISMA 2020 where applicable to non-meta-analytic reviews, emphasizing clear eligibility criteria, search procedures, and study selection flow while acknowledging the absence of statistical aggregation (Page et al., 2021; Petticrew & Roberts, 2006).

3.1 Review design and scope

The review addressed the guiding question of how and under what conditions PPPs contribute to improved governance and performance in VET institutions. The temporal scope covered publications from 2000 to 2023 to capture the diffusion of PPP instruments from infrastructure into human-capital policies and the maturation of governance debates over the last two decades. Given the cross-disciplinary nature of PPPs, the review encompassed education, public administration, development studies, and management literatures. The unit of analysis was the study, defined as a peer-reviewed article, book chapter, or institutional report presenting conceptual arguments or empirical findings pertinent to PPP mechanisms, governance, or performance in VET or TVET systems.

3.2 Information sources and search strategy

Searches were conducted in Scopus, JSTOR, Cairn, and Google Scholar, complemented by targeted searches of institutional repositories, notably the OECD iLibrary, the World Bank Documents & Reports, and European Commission publications, to capture policy evaluations and grey literature germane to PPP implementation in training systems. Search strings combined PPP terms with VET/skills terms and governance/performance terms using Boolean operators and truncation to maximize recall. Queries were iteratively refined following scoping runs and backward–forward snowballing from key seed articles (Tranfield, Denyer, & Smart, 2003; Booth, Sutton, & Papaioannou, 2016). Table 1 documents the sources and representative queries.

Table 1. Information sources and representative queries

Source	*Coverage*	*Representative query syntax*
Scopus	Peer-reviewed journals across social sciences	TITLE-ABS-KEY(“public-private partnership*” OR PPP OR “delegated management” AND (VET OR TVET OR “vocational training” OR apprenticeship) AND (governance OR performance OR “learning outcomes”))
JSTOR	Historical and policy scholarship	(“public-private partnership*” AND vocational) AND (governance OR accountability OR “risk sharing”)
Cairn	Francophone social science	(“partenariat public-privé” AND formation professionnelle) AND (gouvernance OR performance)
Google Scholar	Broad academic and grey sources	“public-private partnerships” “vocational education” governance performance
OECD iLibrary	Policy reports and indicators	“PPP” “TVET” governance evaluation
World Bank Documents	Project and policy evaluations	“public private partnership” vocational skills outcomes
European Commission	EU skills and PPP initiatives	PPP vocational training governance performance

Source: Author’s work

3.3 Eligibility criteria and study selection

Inclusion and exclusion criteria were specified a priori and piloted on a random subset of records to ensure consistent interpretation. Studies were included if they were published between 2000 and 2023; addressed PPPs, broadly construed to include delegated management, concessions, joint ventures, and formalized employer–education co-production arrangements; focused on VET/TVET, apprenticeships, or closely related skills programs; and provided conceptual discussion or empirical evidence on governance mechanisms or performance outcomes. Studies were excluded if they focused exclusively on non-educational sectors without transferable governance insights, addressed education without reference to partnership mechanisms, or lacked methodological clarity sufficient to interpret findings. Language was not an exclusion criterion; English and French publications predominated, with selective inclusion of other languages where abstracts or translations permitted reliable synthesis. The final corpus comprised 47 studies meeting these criteria.

Table 2. Eligibility criteria and rationale

Dimension	*Inclusion criterion*	*Exclusion criterion*	*Rationale*
Topic	PPPs in VET/TVET or apprenticeships with governance or performance focus	Pure infrastructure PPPs with no education relevance	Aligns evidence with the research question
Time	2000–2023	Pre-2000 unless historically foundational	Captures contemporary PPP diffusion to VET
Evidence type	Conceptual, qualitative, quantitative, or mixed-methods	Opinion pieces without identifiable method	Ensures interpretability and analytic value
Language	English, French, or other with accessible abstract/translation	None if neither abstract nor translation available	Balances inclusivity with accuracy

Source: Author’s work

Title and abstract screening was followed by full-text assessment for eligibility. Study selection decisions and reasons for exclusion at full text were recorded to enhance transparency (Page et al., 2021). Backward citation chasing and forward citation alerts were used to identify additional relevant studies until theoretical saturation was reached, defined as repeated retrieval of studies that did not add new governance mechanisms or performance constructs (Webster & Watson, 2002).

3.4 Data extraction and construct operationalization

A structured extraction template was developed to capture bibliographic metadata, context, design features, and substantive constructs. While no formal coding grid or risk-of-bias instrument was applied, the template was designed to facilitate a consistent, concept-centric synthesis across heterogeneous designs (Snyder, 2019; Booth et al., 2016). Table 3 summarizes the extraction schema.

Table 3. Data extraction schema

Field	Description	Illustrative values
Bibliographic data	Authors, year, outlet or institution	Journal article; policy report
Country/region	National or regional context of the study	EU, Southeast Asia, Sub-Saharan Africa
PPP form	Contractual or organizational form	Concession; delegated management; joint venture; dual system partnership
Governance features	Decision-making bodies, stakeholder roles, monitoring mechanisms, risk-sharing	Mixed boards; employer councils; audit clauses; mediation provisions
Performance indicators	Outputs and outcomes tracked	Graduation and placement rates; employer satisfaction; cost per student; innovation proxies
Methods	Study design and data	Case study; survey; quasi-experimental; documentary analysis
Key findings	Governance–performance links and contingencies	Contract governance associated with outcomes; inclusion and regulatory quality as moderators

Source: Author's work

3.5 Synthesis strategy

Given design and indicator heterogeneity, a narrative synthesis was undertaken, guided by the approach of grouping studies into conceptually coherent clusters and identifying cross-study patterns, rival explanations, and boundary conditions (Popay et al., 2006; Petticrew & Roberts, 2006). The synthesis proceeded in three steps. First, studies were organized into a concept-centric matrix mapping PPP forms, governance mechanisms, and performance indicators to identify convergence and divergence (Webster & Watson, 2002). Second, thematic analysis was used to interpretively integrate findings within and across clusters, emphasizing mechanisms such as contract governance quality, stakeholder inclusion, and risk-sharing alignment (Braun & Clarke, 2006; Miles, Huberman, & Saldaña, 2014). Third, propositions were formulated about contextual moderators, including legal enforceability, regulatory capacity, and digitalization strategies, which were later translated into testable hypotheses for the empirical section. No meta-analysis or effect-size aggregation was attempted because constructs and metrics lacked commensurability across settings, and sampling designs varied widely.

3.6 Quality considerations and reflexivity

In place of a formal risk-of-bias tool, studies were appraised narratively for design transparency, data sources, and plausibility of inferences. Particular attention was paid to whether reported outcomes controlled for baseline institutional quality, whether selection effects were discussed, and whether governance variables were measured rather than assumed. During synthesis, greater explanatory weight was given to studies with clearer designs and triangulated data;

however, outlier and negative cases were retained to surface boundary conditions and trade-offs. This stance follows recommendations for narrative reviews in policy domains where experimental evidence is scarce and context salience is high (Grant & Booth, 2009; Gough, Oliver, & Thomas, 2017). The research team maintained an audit trail of search strings, screening decisions, and template iterations to enhance reproducibility. Reflexively, the authors recognize that familiarity with governance and performance literatures may have foregrounded certain constructs; to mitigate this, rival explanations—such as funding stability or labor-market shocks—were explicitly considered when interpreting associations.

3.7 Handling heterogeneity and publication bias

Heterogeneity in contexts, PPP forms, and performance indicators was addressed by privileging mechanism-based explanations over program-type generalizations, consistent with realist and configurational reasoning in public management (Petticrew & Roberts, 2006). Where multiple studies examined similar mechanisms in different settings—such as the role of mixed governance boards or contract monitoring clauses—findings were compared for pattern matching and theoretical replication rather than pooled for average effects. Potential publication bias was mitigated by deliberately incorporating high-quality grey literature from international organizations and by including studies reporting null or adverse outcomes when they met eligibility criteria. Nonetheless, the possibility of biased availability of confidential evaluations or commercially sensitive reports is acknowledged as a limitation.

Figure 1. Conceptual framework: PPP mechanisms-governance and performance in VET

Source: Author's work

4. Results

The review yielded forty-seven studies spanning Africa, Asia, Europe, and the Americas, drawing on qualitative case studies, mixed-methods designs, policy analyses, and a smaller set of quantitative evaluations. Across this corpus, the most consistent patterns relate to governance improvements linked to structured employer engagement, measurable but context-sensitive performance gains in employability and program relevance, and strong contextual moderation by legal frameworks, regulatory capacity, and stakeholder inclusion. At the same time, the evidence base exhibits heterogeneity in indicators and designs that complicates direct comparison, echoing long-standing concerns about commensurability in education and public management evaluations (Pike & Graunke, 2015; Azevedo et al., 2012).

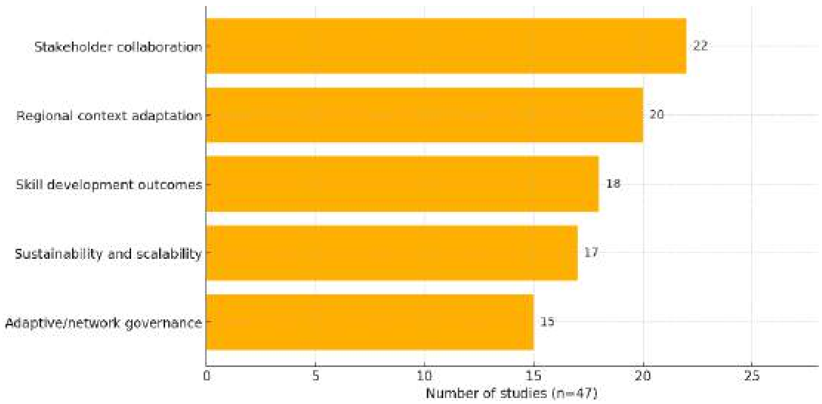
A descriptive synthesis of thematic incidence is presented in Table 1. Fifteen studies emphasize adaptive, multi-level, or networked governance arrangements, typically combining national steering with regional or sectoral co-ordination through mixed boards, employer councils, or joint committees ("Knowledge Transfer through Public-Private…," 2023; Dzhurylo, 2022; Arribas, 2016; Popova, 2022; Moerman, n.d.). Twenty-two studies foreground stakeholder collaboration as a central success factor, documenting the roles of employers, provider leadership, unions, and civil society in curriculum co-design, quality assurance, and work-based learning (Munbodh, 1999; Towip et al., 2021; Edokpolor & Imafidon, 2019; Helmy et al., 2020;). Twenty studies report that PPP forms and tools are adapted to local political economies, sectoral structures, and labor-market dynamics, with evidence from Cameroon, Southeast Asia, Indonesia, Vietnam, and Kosovo illustrating the salience of contextual design (Fornyuy, 2025; Barr & Attrey, 2017; Helmy, 2014; Truong, 2021; Beka & Stublla, 2022). Eighteen studies associate PPP participation with improved competency acquisition, employability, or alignment to market needs, often via competency-based curricula, internships, and digital innovations (Amornvuthivorn, 2016; Bhatt et al., 2024; Olabiyi et al., 2022; Yusvana, 2025; "Supply and demand matching of VET skills…," 2023). Seventeen studies discuss sustainability and scalability, highlighting government commitment, contract governance, and regulatory clarity as enablers (Alba & Stucki, 2021; Latif et al., 2023; Dzhurylo, 2022). Counts in Table 1 reflect explicit theme reporting and do not imply statistical prevalence beyond the included corpus.

Table 4. Incidence of major themes across the 47 included studies

Theme	Studies reporting (n)	Illustrative evidence and examples
Adaptive/multi-level/network governance	15	National–regional co-ordination and employer councils ("Knowledge Transfer through Public-Private…," 2023; Dzhurylo, 2022; Arribas, 2016; Popova, 2022; Moerman, n.d.)
Stakeholder collaboration	22	Joint curriculum design, co-financing, social partner roles (Munbodh, 1999; Towip et al., 2021; Edokpolor & Imafidon, 2019; Helmy et al., 2020)
Regional context adaptation	20	Tailoring to sectoral and policy environments (Fornyuy, 2025; Barr & Attrey, 2017; Helmy, 2014; Truong, 2021; Beka & Stublla, 2022)
Skill development outcomes	18	Enhanced employability and relevance (Amornvuthivorn, 2016; Bhatt et al., 2024; Olabiyi et al., 2022; Yusvana, 2025; "Supply and demand matching of VET skills…," 2023)
Sustainability and scalability	17	Legal and contract governance enablers (Alba & Stucki, 2021; Latif et al., 2023; Dzhurylo, 2022)

Source: Author's work

Figure 2 : Evidence map of PPP-VET themes across the reviewed studies



Source: Author's work

Turning to governance outcomes, studies converge on the contribution of structured employer involvement through mixed boards and advisory councils to improving transparency, accountability, and curriculum–industry alignment. Empirical work links these governance bodies to quicker program refresh cycles, higher placement quality, and more consistent assessment standards (Hooge, 2015; Ridzuan & Rahman, 2022; Towip et al., 2021). Contract governance emerges as an independent predictor of success: where objectives are explicit, outputs measurable, monitoring independent, and dispute-resolution clauses enforceable, project performance and institutional learning improve (Helmy et al., 2020; Latif et al., 2023; Sajida & Kusumasari, 2023). Comparative evidence from European neighborhood contexts suggests that clear legal frameworks—codifying rights and responsibilities, procurement rules, and auditability—support governance quality and reduce role ambiguity that can otherwise stall projects (Arribas, 2016; "Regional features of the European public…," 2022).

Not all governance effects are benign. Several studies warn that information asymmetries and complex service bundles may weaken transparency and enable regulatory capture, especially where capacity-constrained regulators rely heavily on a small set of providers (Gianfaldoni & Rostaing, 2012; Muller, 2009). Evidence from contexts with limited inclusion of local actors underscores implementation gaps even under formally robust designs; exclusion of SMEs or educators from decision arenas can reduce legitimacy and hamper uptake (Samara, n.d.; Muzari, 2023). Risk-sharing is a recurrent fault line. Findings indicate that balanced allocations—public retention of regulatory and political risk, private assumption of performance and certain operational risks—stabilize partnerships; misaligned risk can incentivize superficial compliance with narrow KPIs at the expense of pedagogical quality and inclusion (Martimort & Pouyet, 2008; Abdallah, 2021; Rashidi, 2015).

Performance results are generally positive but contingent. Studies report higher employment rates and stronger employer satisfaction where partnerships co-design curricula and embed substantial workplace learning, including dual-system adaptations and industry-based programs (Gamboa et al., 2013; Oswald-Egg & Renold, 2021; Remington, 2018). Regional analyses in Southeast Asia describe innovation spillovers—such as the adoption of new technologies and process improvements—when PPPs are integrated into regional development strategies (Barr & Attrey, 2017; Towip et al., 2021). Digital and competency-based innovations within PPPs correlate with enhanced skill relevance and flexible delivery modes, particularly when paired with instructor capacity building and data infrastructure (Yusvana, 2025; Ali et al., 2024; Tsarova, 2024). Evidence from India indicates substantial gains in employability and wages for graduates of aligned programs, reinforcing the argument that curriculum–industry alignment mediates PPP effects (Bhatt et al., 2024).

At the same time, trade-offs recur. Studies caution that financially weighted KPI regimes can bias providers toward throughput metrics, crowding out investments in foundational capabilities and equity; selective recruitment and program tracking may emerge under cost pressure, undermining access for disadvantaged learners (Fernández, 2014; Houdret & Bonnet, 2016). Efficiency claims are heterogeneous: some studies identify reduced cost per student or improved resource use, but return-on-investment metrics are rarely standardized, and few analyses adjust for baseline funding or institutional quality (Abbott & Doucouliagos, 2000; Du, 2008; Wang, 2022). Thematic synthesis also highlights sustainability challenges, notably staff turnover and weak institutionalization of knowledge in North–South projects; although knowledge transfer improves training practices in the short run, retention and local embedding remain fragile without strong public anchoring and career pathways ("Knowledge Transfer through Public-Private…," 2023; Melesse et al., 2022).

Contextual moderators and boundary conditions are prominent across cases. Regulatory quality and enforceability consistently strengthen the association between PPP involvement and both governance and performance outcomes, with legal codification and independent audits cited as

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enabling mechanisms (Radkevych, 2024; Kryshchenko, 2024; Вороніна-Пригодій, 2024). Government commitment—expressed through predictable funding, policy consistency, and stewardship roles—underpins scaling, while inclusive stakeholder representation improves both relevance and equity (Alba & Stucki, 2021; Dzhurylo, 2022; Arribas, 2016). Regional case work from Cameroon and Indonesia illustrates the importance of relational governance—trust, leadership continuity, boundary-spanning roles—in sheltering partnerships from political cycles and ensuring that firm-level benefits translate into system-level improvements (Fornyuy, 2025; Helmy, 2014). Table 2 synthesizes the principal mechanisms, outcome domains, typical indicators, and the prevailing direction of association reported across contexts.

Table 5. Mechanisms and outcome associations reported across contexts

Mechanism	Outcome domain	Typical indicators	Predominant association	Representative studies
Mixed governance boards with employer representation	Governance and performance	Curriculum update cycle time; placement and internship quality; employer satisfaction	Positive, contingent on inclusion of unions/SMEs	Hooge (2015); Ridzuan & Rahman (2022); Towip et al. (2021)
Contract governance quality (clarity, measurability, audits, dispute resolution)	Project and institutional performance	KPI attainment; timeliness; service quality; audit findings	Positive and sizable across settings	Helmy et al. (2020); Latif et al. (2023); Sajida & Kusumasari (2023)
Balanced risk-sharing (public regulatory risk; private performance/operational risk)	Performance and equity	Cost per student; program stability; access for disadvantaged learners	Positive when aligned; negative when misaligned	Martimort & Pouyet (2008); Abdallah (2021); Rashidi (2015)
Legal frameworks and regulatory capacity	Governance quality and outcomes	Transparency indices; procurement compliance; independent evaluations	Positive, especially for scaling	Radkevych (2024); Kryshchenko (2024); Arribas (2016); Вороніна-Пригодій (2024)
Inclusive stakeholder representation (SMEs, unions, local actors)	Relevance and inclusion	Employer and learner satisfaction; internship availability; equity metrics	Positive, with stronger effects in decentralized settings	Arribas (2016); Edokpolor & Imafidon (2019); Helmy (2014); Beka & Stublla (2022)
Digital and competency-based innovation within PPPs	Access and adaptability	Platform uptake; competency assessment completion; micro-credential issuance	Positive when paired with capacity building	Tsarova (2024); Yusvana (2025); Ali et al. (2024)
Narrow KPI regimes and cost-pressure	Equity and quality trade-offs	Selective intake; dropout; tracking; foundational skill proxies	Negative risk factor	Fernández (2014); Houdret & Bonnet (2016)
Knowledge transfer and staff retention	Sustainability	Staff turnover; practice institutionalization; local trainer development	Mixed; barrier without public anchoring	"Knowledge Transfer through Public-Private…" (2023); Melesse et al. (2022)

Source: Author's work

Two cross-cutting insights flow from these results. First, PPPs tend to be most effective when governance, contractual, and evaluative instruments are coherently aligned with public value objectives; when this alignment holds, studies document simultaneous gains in responsiveness, employer engagement, and graduate outcomes (Gamboa et al., 2013; Oswald-Egg & Renold, 2021; Barr & Attrey, 2017). Second, PPPs are sensitive to institutional context. In environments with policy instability, weak enforcement, or exclusionary stakeholder structures, formal partnership arrangements are less likely to yield durable improvements and may produce unintended inequities or measurement gaming (Muller, 2009; Samara, n.d.; Muzari, 2023). These boundary conditions underscore the importance of tailoring PPP design to local legal capacity and social partnership traditions, a conclusion mirrored in European and post-conflict reform trajectories where codification of PPP instruments accompanies efforts to rebuild VET infrastructure and standards ("Regional features of the European public…," 2022; Kryshchenko, 2024).

5. Discussion

The results indicate that PPPs in vocational education and training (VET) improve governance quality and program performance when collaborative structures are coherently aligned with credible performance management, supporting the twin lenses of new public governance and performance-based management (Osborne, 2006; Bouckaert & Halligan, 2008). Across heterogeneous contexts, partnerships that institutionalize employer co-design of curricula and substantial work-based learning report higher placement rates, stronger employer satisfaction, and faster program renewal, although magnitudes vary by sector and regulatory quality (Gamboa et al., 2013; Oswald-Egg & Renold, 2021; Bhatt et al., 2024). These findings reinforce the view that PPPs create value not by contracting per se but by orchestrating interdependent actors around shared outcomes and enforceable rules (Rowe et al., 2018).

Table 6. Mechanisms, positive effects, and boundary conditions emerging from the results

Mechanism	Positive effects reported	Boundary conditions and risks
Mixed governance boards with employer and union representation	Faster curriculum updates; higher placement quality; clearer standards (Hooge, 2015; Ridzuan & Rahman, 2022)	Exclusion of local actors reduces legitimacy and uptake; capture risk by dominant firms (Samara, n.d.; Muzari, 2023)
High-quality contract governance (clear KPIs, audits, remedies)	Improved delivery timeliness, service quality, and learning effects (Helmy et al., 2020; Latif et al., 2023)	Over-narrow KPIs prompt gaming and neglect of equity or foundational skills (Fernández, 2014; Houdret & Bonnet, 2016)
Balanced risk-sharing and co-financing	Stable engagement; cost discipline without eroding standards (Rashidi, 2015)	Misallocation undermines incentives; hidden guarantees socialize losses (Martimort & Pouyet, 2008; Abdallah, 2021)

Source: Author's work

Governance architecture emerges as a principal mechanism. Mixed boards and employer councils enhance transparency, horizontal accountability, and curriculum–industry alignment, especially when unions and SMEs have voice (Hooge, 2015; Ridzuan & Rahman, 2022; Towip et al., 2021). Contract governance quality—clarity of objectives, measurable outputs, independent audits, and dispute-resolution clauses—consistently predicts project success and organizational learning, echoing broader public management evidence that "how" rules are written and enforced matters as much as "who" participates (Helmy et al., 2020; Latif et al., 2023; Sajida & Kusumasari, 2023). Legal codification further stabilizes roles and responsibilities, reducing ambiguity that otherwise fuels delays and opportunism (Arribas, 2016; Regional features of the European public…, 2022). Nonetheless, risks are nontrivial: information asymmetries and complex service bundles can dilute transparency, while narrow KPI regimes invite gaming and may shift attention from foundational capabilities to throughput (Muller, 2009; Gianfaldoni & Rostaing, 2012; Fernández, 2014; Houdret & Bonnet, 2016). The allocation of risk is pivotal; misaligned schemes that transfer regulatory or political risk to

private actors or conceal performance risk behind guaranteed payments undermine incentives and equity (Martimort & Pouyet, 2008; Abdallah, 2021).
Contextual moderators qualify these patterns. Regulatory capacity and enforceable legal frameworks amplify positive associations between PPP intensity and outcomes, enabling scaling through predictable procurement and independent oversight (Radkevych, 2024; Kryshchenko, 2024; Вороніна-Пригодій, 2024). Digital and competency-based innovations within PPPs widen access and adaptability, provided instructor upskilling and data governance keep pace (Tsarova, 2024; Yusvana, 2025; Ali et al., 2024). Where government stewardship is inconsistent or funding volatile, partnerships struggle to institutionalize knowledge transfer and retain staff, particularly in North–South projects that depend on expatriate expertise ("Knowledge Transfer through Public-Private…," 2023; Melesse et al., 2022). These contingencies suggest that design choices should be matched to state capacity and market structure rather than imported wholesale.

Table 7. Design choices by regulatory capacity suggested by the synthesis

Regulatory capacity	Recommended PPP design choices	Illustrative rationale and sources
Higher capacity environments	Performance-based contracts with independent audits; multi-actor boards; outcome-linked renewals	Legal enforceability supports sophisticated monitoring; collaborative bodies align skills with sectoral demand (Arribas, 2016; Latif et al., 2023; Oswald-Egg & Renold, 2021)
Lower capacity environments	Phased pilots; simpler KPIs paired with qualitative reviews; strong public anchoring of standards and equity; technical assistance for regulators	Reduces gaming, builds monitoring capability, and protects access during institutional maturation (Radkevych, 2024; Kryshchenko, 2024; Helmy et al., 2020)

Source: Author's work

The evidence base carries limitations that temper interpretation. Indicator heterogeneity and scarce counterfactuals complicate causal attribution, and efficiency claims are difficult to benchmark across settings because unit costs and return-on-investment metrics lack standardization (Pike & Graunke, 2015; Azevedo et al., 2012; Du, 2008). Publication and data-access asymmetries likely underrepresent unsuccessful or discontinued initiatives. Future research should prioritize longitudinal and quasi-experimental designs, integrate social return on investment and capability metrics alongside placement and wage outcomes, and examine distributional effects by gender, socioeconomic status, and region (Carriou & Jeger, 1997; Gamboa et al., 2013). Overall, the discussion supports a contingent governance proposition: PPPs enhance VET only when collaborative structures, credible accountability, and equity safeguards are designed as a coherent bundle and situated within enabling legal and regulatory ecosystems (Osborne, 2006; Bouckaert & Halligan, 2008).

6. Conclusion

This review shows that PPPs can be powerful instruments for improving vocational training, but only when design choices and institutional conditions pull in the same direction. Partnerships work best when contractual incentives, collaborative governance, and risk-sharing are aligned with public value: clear objectives and transparent monitoring prevent drift, inclusive boards keep curricula responsive and legitimate, and balanced allocation of risks sustains employer engagement without eroding standards. Under these circumstances, studies report faster program renewal, better graduate transitions to work, stronger employer satisfaction, and credible steps toward efficiency. The flipside is instructive. Where oversight is weak, indicators are narrowly defined, or local stakeholders are sidelined, PPPs tend to underperform, occasionally amplifying inequities or encouraging compliance games that boost

throughput without deepening learning. The lesson is less about endorsing or rejecting PPPs than about treating them as contingent governance bundles whose effects depend on context.
Several limitations qualify these conclusions. The evidence base is dominated by case studies and mixed-methods designs with heterogeneous indicators, which constrains causal attribution and comparability. Cost metrics and return-on-investment estimates are uneven and rarely standardized, making efficiency claims tentative. Publication and access biases likely skew the corpus toward visible or successful programs, while negative or discontinued initiatives remain under-documented. These constraints do not invalidate the overall picture but do urge caution in generalizing beyond the settings studied.
The most promising avenues lie in moving from static program descriptions to dynamic learning systems. Future work should prioritize longitudinal and quasi-experimental designs that can disentangle selection from treatment effects and track persistence of outcomes. Measurement needs to broaden beyond placement and wages to include social return on investment, foundational and transferable skills, and distributional impacts on women, youth, and marginalized regions. Knowledge transfer and staff retention deserve special attention, particularly in partnerships that rely on external experts; institutionalizing local capability is the hinge between pilot success and systemic change. Digital transformation within PPPs should be evaluated not only for reach and flexibility but also for data governance, instructor upskilling, and inclusion. Finally, policy experimentation should be staged and adaptive, with simple, auditable indicators in lower-capacity settings and progressively more sophisticated performance contracts as regulatory capability matures. By designing PPPs as coherent, context-aware bundles—and rigorously learning from them—VET systems can balance responsiveness, equity, and efficiency in a labor market that is not standing still.

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