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From Contractual Alignment to Collaborative Resilience: A Governance Model for Public–Private Partnerships Under Institutional Complexity and Stakeholder Conflict

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Abstract

Public–private partnerships (PPPs) are designed through contracts but governed over time through relationships, institutional constraints, stakeholder scrutiny, and recurrent adaptation. This creates a persistent public-management problem: contractual alignment may establish responsibilities and incentives without ensuring that a partnership can remain governable when conditions, expectations, or conflicts change. This article develops an original non-empirical collaborative governance model that reconceptualizes PPP resilience as a proposed capacity to preserve workable coordination, legitimate public accountability, and adaptive response under institutional complexity and stakeholder conflict. The analysis distinguishes contractual governance, relational governance, institutional pressures, public-value safeguards, and adaptive capacity rather than treating them as interchangeable substitutes. It argues that resilience depends on contingent complementarity: formal mechanisms can stabilize expectations and allocate responsibilities, while relational mechanisms can support interpretation, coordination, and negotiated adjustment; either may become counterproductive when overextended, misaligned, or detached from accountability requirements. The proposed model also treats disruption and renegotiation as diagnostically ambiguous, because they may signal either adaptive recalibration or governance breakdown depending on process quality, power distribution, and safeguard preservation. The contribution is a multilevel architecture linking governance modes, institutional pressures, collaborative behavior, and legitimacy constraints while preserving level-of-analysis and temporal boundaries. The model is not presented as empirically validated, universally applicable, or implementation-ready. Its value is explanatory and heuristic rather than predictive, and its propositions require comparative and longitudinal validation.

Keywords: Public–private partnerships, Collaborative resilience, Contractual governance, Relational governance, Institutional complexity, Public accountability

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Introduction

Public–private partnerships (PPPs) occupy an unusual governance position because contractual exchange, public authority, interorganizational collaboration, and public accountability operate simultaneously. Public-administration scholarship accordingly treats PPPs as a multidimensional field spanning institutional, contractual, governance, and performance questions rather than as a single procurement technique [1]. This breadth matters because a governance arrangement that is coherent at contract award may later confront shifts in demand, political priorities, stakeholder expectations, technology, financing conditions, or service requirements.

Comparative evidence also cautions against assuming that the PPP form itself delivers a collaborative advantage. In Dutch transport infrastructure, PPPs did not show an automatic performance superiority over traditional procurement, while cross-national configurational evidence indicates that PPP market maturity depends on combinations of institutional conditions rather than one enabling factor [2, 3]. The analytical problem is therefore not simply whether a partnership is contractually aligned, but whether its governance can remain workable under changing and contested conditions. This distinction is particularly consequential in public management because continuity of service and political answerability persist even when commercial incentives or operating circumstances shift.

This article proposes collaborative resilience as a governance capability rather than an observed performance outcome. It integrates contractual governance, relational governance, institutional complexity, stakeholder conflict, adaptive capacity, and public-value safeguards while keeping them analytically distinct. The model does not assume that more contract, more trust, or more collaboration is inherently superior; it asks when combinations of governance mechanisms remain mutually reinforcing and when they generate rigidity, capture, burden, or breakdown.

Why contractual completeness cannot guarantee ppp resilience

Long-duration PPPs cannot plausibly specify every future contingency without either prohibitive complexity or continuing interpretive discretion. Longitudinal evidence from Ireland’s first schools PPP shows that contractual governance changed across a 16-year lifecycle and differed between contract-management and operational levels [4]. The implication is not that contracting is ineffective, but that contractual alignment should be understood as an initial and revisable governance condition rather than a complete solution. What appears sufficiently specified at award may become inadequate as dependencies, operational knowledge, and external conditions change.

Renegotiation further demonstrates why incompleteness is not synonymous with failure. Comparative US evidence identifies exogenous shocks, political and project complexity, and institutional inexperience among renegotiation triggers, showing that opportunism is only one possible explanation [5]. Sustainability-oriented PPP research similarly indicates that public objectives depend on governance and procurement practices rather than becoming self-enforcing once written into formal arrangements [6].

This article therefore distinguishes contractual completeness from adaptive governability. A contract provides a necessary coordination baseline, whereas resilience additionally requires legitimate mechanisms for interpretation, adjustment, escalation, and renegotiation. The central question is not whether contingencies occur, but whether the partnership can absorb them without sacrificing accountability, public value, or workable cooperation.

Institutional complexity in public–private collaboration

Institutional complexity arises when PPP actors face multiple, sometimes incompatible, demands across organizational, legal, political, and professional settings. Complexity theory in public management emphasizes interaction, emergence, and adaptation, implying that outcomes may develop nonlinearly rather than follow a fully controllable ex ante sequence [7]. This perspective is useful only if the relevant levels remain visible; complexity should not become a catch-all explanation for any unexpected project event.

PPP research at the actor level shows why that distinction matters. Contractual and relational governance can be enacted differently by participants positioned within public and private parent organizations, each carrying distinct institutional expectations [8]. At the network level, evidence from four Chinese municipalities shows that collaboration structures and participant roles can evolve over time [9]. Comparative work on collaborative government digitalisation likewise indicates that leadership and institutional design configurations vary across national settings [10].

The proposed model therefore treats institutional complexity as a context field surrounding, rather than replacing, governance mechanisms. It affects which mechanisms are feasible, legitimate, and costly and may itself shift across lifecycle stages. Institutional pressure is consequently modeled as a boundary condition on governance choice and adaptation, not as a project-level variable inferred uniformly from one actor’s behavior.

Contractual governance

Contractual governance provides the formal architecture through which responsibilities, decision rights, monitoring requirements, risk allocations, remedies, and renegotiation procedures can be specified. Recent evidence from India indicates that PPP governance structures vary with contextual determinants, supporting a contingent rather than universal view of formal design [11]. In the proposed model, contractual governance therefore establishes a baseline for coordination and accountability but does not determine resilience independently of context.

Formalization can also create governance costs. Evidence from Chinese PPPs shows that bureaucratic redundancy may generate administrative burden, illustrating how additional controls can consume coordination capacity rather than simply strengthen oversight [12]. Collaborative-governance research further suggests that institutional design and leadership may involve tradeoffs among effectiveness, democratic legitimacy, and accountability [13]. These findings caution against equating stronger formal control with better governance.

The article accordingly proposes a sufficiency principle: contractual mechanisms should be strong enough to allocate authority, protect public obligations, and structure dispute resolution, but not treated as self-justifying simply because they increase specification. Beyond a context-dependent point, added formalization may duplicate controls, narrow discretion needed for adaptation, or divert attention from relationship management and public-value judgment. That threshold is conceptual here and requires empirical validation.

Relational governance

Relational governance concerns the interactional conditions through which parties interpret obligations, exchange information, coordinate behavior, and manage interdependence. PPP scholarship characterizes relational quality as multidimensional, while empirical work indicates that contractual governance, relational norms, trust, cooperation, and partner contribution can interact rather than operate as simple alternatives [14-16]. These studies support complementarity as a plausible governance pattern, but their designs do not justify treating trust or cooperation as causal guarantees of resilience. Boundary-spanning behavior adds an interface mechanism between formal and relational governance. Evidence from public infrastructure projects links boundary spanning with contractual fairness, innovation, and performance, with fairness partially mediating one reported relationship [17]. Because the evidence is cross-sectional, causal ordering remains uncertain; nevertheless, it supports the distinction between a formally specified contract and the relational work through which actors experience and enact that contract.

This article therefore proposes that relational governance is most valuable when it increases interpretive capacity without displacing accountability. Its contribution is not informality for its own sake, but the ability to clarify expectations, surface emerging problems, and support adjustment within legitimate boundaries. **Table 1** organizes the governance problems for which contractual and relational mechanisms may reinforce, substitute for, or undermine one another.

Table 1. When contractual and relational mechanisms reinforce—or weaken—PPP governance

Governance problem	Contractual mechanism	Relational mechanism	Pattern	Principal advantage	Vulnerability	Counterproductive condition
Responsibility ambiguity	Defined rights, duties, escalation routes	Joint interpretation and clarification	Proposed complementarity	Combines role clarity with situational interpretation	Informal reinterpretation may drift from authorized obligations	Relational accommodation overrides material public protections
Emerging information gaps	Reporting and disclosure requirements	Open information exchange and early problem surfacing	Proposed complementarity	Formal traceability plus faster sense-making	Information may be selectively disclosed	Reporting becomes burdensome or informal exchange bypasses records
Routine interdependence	Coordinated procedures and decision rights	Trust, reciprocity, communication	Proposed complementarity	Predictability without requiring continual enforcement	Dependence on particular boundary spanners	Trust substitutes for necessary verification
Compliance and monitoring	Performance requirements, remedies, auditability	Cooperative problem resolution	Conditional substitution	Relational repair may avoid premature enforcement	Persistent underperformance can be normalized	Cooperation delays justified corrective action
Dispute escalation	Formal dispute and renegotiation procedures	Negotiation and relationship repair	Proposed complementarity	Preserves enforceability while allowing adjustment	Strategic delay or unequal bargaining power	Informality obscures distributive consequences

Note: Entries synthesize the evidence discussed in the preceding sections with the article's proposed governance distinctions. "Proposed" denotes conceptual integration requiring empirical validation.

Stakeholder conflict and public accountability

PPP governance extends beyond the contracting parties because projects can create obligations and consequences for users, communities, regulators, elected officials, and other stakeholders. Research on public-private collaboration shows that social-value creation coexists with divergent goals and incentives, making relational coordination relevant to more than technical task performance [18]. Collaboration, however, does not neutralize power. Evidence from global sport governance shows that private actors can use discursive strategies to shape network processes, providing a hard case against assuming that participation itself guarantees balanced influence or legitimacy [19].

Accountability must therefore be treated as a continuing governance requirement rather than an ex post reporting exercise. Configurational evidence shows that collaborative governance can achieve both legitimacy and accountability through different combinations of conditions rather than one universal institutional design [20]. A recent systematic review of public values in digitalisation PPPs likewise demonstrates that public-private collaboration implicates plural values that cannot be reduced to efficiency or delivery metrics [21].

The proposed model separates contractual fairness, stakeholder voice, legitimacy, accountability, and public value because these constructs operate at different levels and need not move together. **Table 2** maps how institutional pressures and stakeholder conflicts generate distinct accountability exposures and constrain otherwise feasible adaptations.

Table 2. Institutional pressures that convert PPP conflict into public-accountability exposure

Pressure or conflict source	Principal actors affected	Accountability obligation	Adaptation constraint	Legitimacy or public-value exposure	Proposed governance response	Unresolved trade-off
Divergent public and commercial objectives	Public authority; private partner	Demonstrate consistency with public mandate and agreed obligations	Mutually beneficial adjustment may be limited by mandate	Private efficiency may displace broader social value	Make value tensions explicit before renegotiating	Flexibility versus mandate fidelity
Political or regulatory scrutiny	Public managers; elected principals; consortium	Explain decisions and preserve auditability	Rapid adaptation may require additional authorization	Closed adjustment can appear procedurally illegitimate	Retain documented decision and escalation pathways	Responsiveness versus procedural control
Unequal stakeholder voice	Users; communities; contracting parties	Provide credible opportunities for affected interests to be considered	Bilateral agreement may not address external consequences	Participation can be formally present but substantively unequal	Distinguish consultation from decision authority	Inclusiveness versus decisional clarity
Private influence within collaborative networks	Public and private actors	Protect impartial public decision processes	Relationship preservation can inhibit challenge	Strategic framing may distort whose interests are recognized	Maintain contestability and independent oversight	Trust versus critical scrutiny
Plural public values	Public authority; stakeholders; service users	Balance multiple legitimate public obligations	No single performance metric resolves value conflicts	Efficiency gains may coexist with losses elsewhere	Use explicit value-sensitive deliberation	Comparability versus value plurality

Note: The table distinguishes accountability exposure from contractual noncompliance. Governance responses are proposed safeguards derived from the preceding analysis and are not presented as proven remedies.

Adaptive capacity in long-term partnerships

Adaptive capacity refers here to the proposed ability of a PPP to modify governance responses when circumstances change while preserving sufficient coordination, accountability, and public-value protection. Crisis evidence from a Portuguese PPP shows that renegotiation can reconfigure tensions within a private consortium and across the wider partnership, indicating that adaptation is a governance process rather than a neutral contractual amendment [22]. Renegotiation may therefore reflect learning, distributive conflict, institutional pressure, or opportunistic behavior; its meaning depends on the process and consequences surrounding it.

The broader resilience literature reinforces this conditional view. Research on low-carbon, climate-resilient infrastructure identifies governance, financing, institutional, and risk-allocation challenges beyond initial contract design, while configurational evidence from green-transition collaborations shows that collaborative governance may arise through multiple combinations of drivers [23, 24]. These findings support equifinality as a boundary condition rather than a claim that one adaptive pathway fits all PPPs.

Accordingly, the model treats adaptive capacity as a repertoire of legitimate responses: interpretation, escalation, negotiated adjustment, reallocation, and, where necessary, structured renegotiation. The relevant criterion is not the frequency of change but whether adaptation preserves governability without converting flexibility into unaccountable discretion or shifting public risks invisibly.

From contractual alignment to collaborative resilience

The move from contractual alignment to collaborative resilience changes the object of governance. Alignment concerns whether responsibilities, incentives, controls, and expectations are coherently arranged at a given point; resilience concerns whether that arrangement remains governable as conditions and relationships evolve. Metagovernance scholarship conceptualizes the coordination of multiple governance modes and instruments rather than selection of one universally superior mode [25]. It therefore provides a theoretical basis for treating formal and relational governance as an orchestrated portfolio.

The shift also requires organizational capacity on the public side. New Public Governance scholarship argues that collaboration depends not only on external network arrangements but also on internal public-management tools and capacities [26]. A public partner unable to interpret performance information, coordinate across agencies, manage stakeholders, or authorize timely adaptation may possess a sophisticated contract yet lack the capacity to govern it responsively.

Collaborative resilience is therefore proposed as a multilevel governance capability: preserving coordinated action, legitimate accountability, and adaptive room under changing institutional and stakeholder conditions. It is neither synonymous with project success nor premised on preserving collaboration at all costs. Where public obligations, accountability, or workable coordination cannot be maintained, resilience may require constraining, redesigning, or ultimately ending the collaborative arrangement.

The proposed ppp governance model

The proposed model treats collaborative resilience as an emergent governance capability produced by interaction among formal coordination, relational processes, adaptive response, and public-accountability safeguards. Recent PPP evidence shows that contractual and relational governance can both be positively associated with sustainability, although their relative effects and pathways vary within the sampled context [27]. This supports complementarity as an empirical premise, not the stronger claim that the present resilience model is validated. Relational public-administration scholarship further directs attention toward situated interaction and evolving relationships rather than treating governance as a static property of organizations or contracts [28].

Four analytical layers are therefore distinguished. The contractual layer establishes authorized obligations and remedies. The relational layer supports interpretation, communication, fairness, and coordinated adjustment. An adaptive layer governs disruption, escalation, and renegotiation. An accountability layer constrains all three through legitimacy, public-value, and answerability requirements. Institutional pressures surround rather than belong to any single layer, while project actors, organizations, networks, and wider institutional settings remain analytically separable.

Figure 1 synthesizes these relationships by showing how resilience depends on complementary governance mechanisms whose usefulness changes under institutional pressure and disruption.

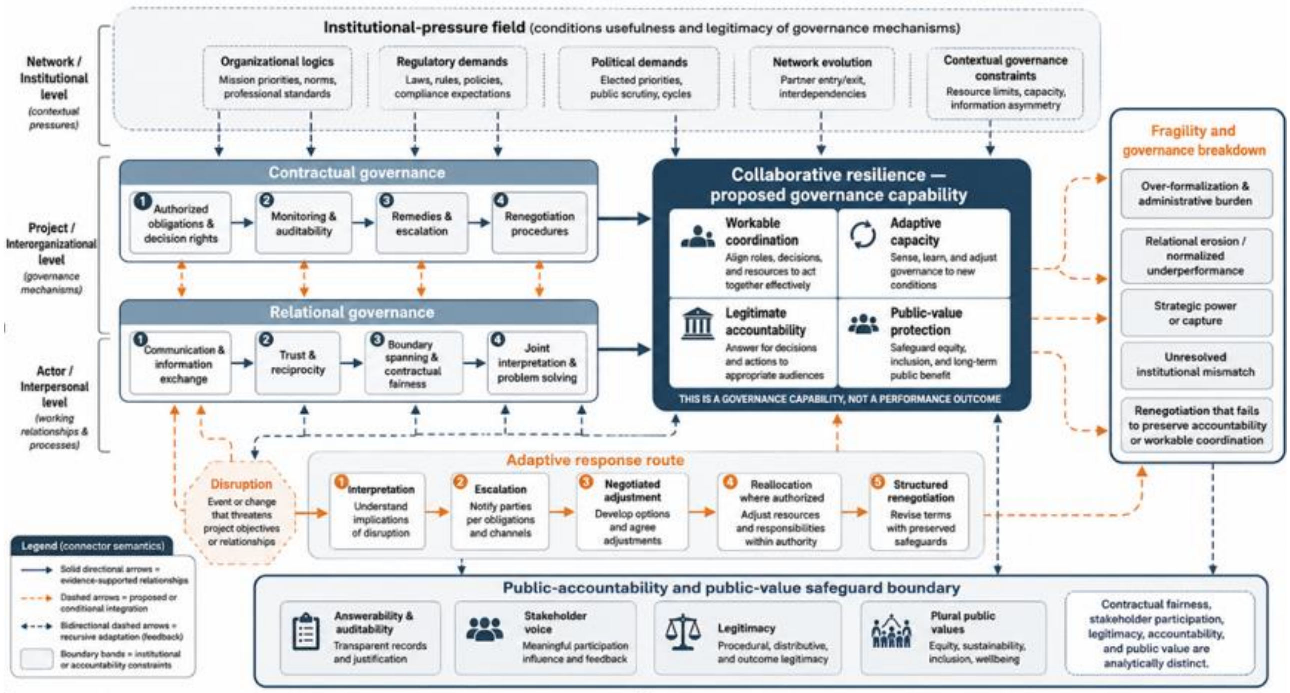

Figure 1. PPP resilience depends on complementary contractual, relational, adaptive, and public-accountability mechanisms

Governance substitution and complementarity

Complementarity should not be treated as a permanent property of governance mechanisms. Metagovernance evidence from interorganizational partnership settings suggests that active coordination can help actors navigate competing organizational and collaborative demands [29]. Applied cautiously to PPPs, this supports a proposed orchestration rule: formal and relational mechanisms are complementary when each addresses a coordination problem that the other cannot adequately resolve without undermining accountability.

Substitution is narrower. Relational repair may temporarily substitute for formal enforcement when disagreement is interpretable and public obligations remain protected. Conversely, formal escalation may substitute for relational negotiation when bargaining becomes strategically distorted or persistent underperformance is normalized. Redundancy differs from both: additional control can consume administrative capacity without adding commensurate governance value [12]. Contractual-relational interaction may also operate through trust and relational norms [15], while recent PPP evidence indicates that both governance modes can remain independently relevant [27].

The proposed model therefore rejects fixed rankings. The appropriate mix depends on the governance problem, lifecycle stage, institutional setting, power distribution, and accountability exposure. Complementarity becomes counterproductive when relational discretion defeats authorized safeguards or when contractual specification suppresses legitimate adaptation.

Disruption, renegotiation, and collaborative adaptation

Disruption tests the partnership's governance architecture because established allocations and routines may no longer fit operating conditions. Renegotiation should therefore be interpreted diagnostically rather than classified automatically as success or failure. US evidence identifies multiple triggers beyond opportunism [5]. Crisis evidence also shows that renegotiation can intensify tensions within and across partnership organizations [22].

Adaptive governance requires more than contractual amendment. Performance-management research in collaborative governance identifies persistent attribution, accountability, learning, and multi-organizational challenges [30]. Feedback can consequently support adaptation only when actors can distinguish operational deterioration, changed external conditions, strategic behavior, and measurement artifacts. The proposed model treats performance information as an input to collective diagnosis, not as a self-interpreting resilience metric.

A resilient trajectory is proposed when disruption prompts timely interpretation, authorized adjustment, and preservation of accountability. A fragile trajectory arises when recurrent exceptions are absorbed informally without resolving underlying misalignment. Breakdown becomes more likely when renegotiation cannot restore workable coordination or when adaptation depends on obscuring distributive consequences, public risks, or responsibility.

Legitimacy and public-value safeguards

Adaptability is not normatively sufficient. Collaborative arrangements can remain operational while losing legitimacy or redistributing burdens in ways inconsistent with public obligations. Evidence on collaborative governance shows that legitimacy and accountability can coexist through different institutional configurations [20]. PPP research on public values similarly demonstrates that public-private governance implicates multiple values rather than one performance criterion [21].

The model therefore positions safeguards as constraints on adaptive discretion. Contractual fairness concerns how parties experience and interpret their exchange relationship [17]; social-value creation concerns consequences extending beyond bilateral exchange [18]. Neither is equivalent to democratic legitimacy or public accountability. Adaptation should consequently preserve traceable authority, meaningful consideration of affected interests, contestability, and explicit attention to public-value tradeoffs.

This produces a deliberate tension. Rapid adjustment can favor managerial responsiveness, whereas additional authorization and stakeholder scrutiny may slow action. Collaborative resilience does not eliminate that tension. It denotes the proposed capacity to adapt without making accountability invisible. Where an efficient adjustment violates material public obligations, resilience cannot be inferred merely because collaboration continues.

Failure states and governance breakdown

The model distinguishes failure mechanisms because superficially similar performance problems can have different governance origins. Formal overload occurs when monitoring or authorization requirements generate burden disproportionate to their coordinating value [12]. Relational erosion occurs when information withholding, distrust, or normalized underperformance weakens joint problem solving. Power distortion is a separate risk: collaborative networks can permit strategic influence that undermines balanced deliberation [19]. Performance-management arrangements may also create attribution and accountability tensions when responsibility is distributed across organizations [30].

Institutional mismatch and unresolved disruption add temporal pathways to failure. Renegotiation triggered by shocks or complexity may restore governability, but it can also reproduce unresolved tensions [22]. Breakdown is therefore proposed as a state in which available contractual, relational, adaptive, and accountability mechanisms no longer sustain both workable coordination and legitimate public obligations.

Table 3 differentiates resilience, fragility, and breakdown as trajectories rather than fixed labels.

Table 3. Diagnosing PPP resilience, fragility, and breakdown after disruption

State or trajectory	Governance response	Collaborative behavior	Renegotiation/adaptation capacity	Public-value protection	Legitimacy effect	Likely trajectory	Transition trigger
Resilient recalibration	Timely, authorized adjustment	Information sharing and bounded problem solving	Available and procedurally structured	Explicitly retained	Maintained or contestable	Restored governability	New disruption or unresolved tradeoff
Latent fragility	Repeated exceptions without structural correction	Cooperation persists but becomes selective	Informal or delayed	Unevenly considered	Gradual erosion risk	Accumulating misalignment	Escalation, declining trust, or external scrutiny
Defensive rigidity	Additional controls dominate response	Interaction becomes compliance-centered	Narrow discretion	Formally protected but adaptation constrained	Procedural legitimacy may persist	Reduced adaptability	Burden, delay, or inability to respond
Captured adaptation	Flexible adjustment favors dominant actors	Cooperation masks asymmetric influence	High but weakly constrained	Selectively protected	Declining contestability	Apparent stability with governance vulnerability	Challenge, audit, stakeholder mobilization
Governance breakdown	Coordination and safeguards fail jointly	Relationship repair no longer works	Renegotiation cannot restore workable terms	Materially compromised or indeterminate	Seriously contested	Redesign, termination, or replacement becomes plausible	Failure to restore accountable coordination

Note: States and transition triggers are proposed diagnostic categories, not validated stages or predictions.

Propositions and boundary conditions

The model yields four testable propositions. First, contractual and relational governance will be most likely to support collaborative resilience when they address distinct coordination problems without displacing one another's accountability functions. Second, adaptive capacity will be more consequential under disruption when renegotiation is procedurally authorized and relationally workable. Third, metagovernance will matter most where organizational and collaborative demands conflict and no single governance mode is sufficient. Fourth, adaptation will qualify as resilient only when legitimacy and public-value safeguards remain materially operative.

These propositions are conditional rather than universal. PPP market maturity varies configurationally [3], long-term governance evolves across lifecycle stages [4], and power asymmetry can shape collaborative processes [19]. Climate-resilient infrastructure research further illustrates how sectoral risks and institutional conditions alter governance demands [23]. Sector, jurisdiction, lifecycle stage, shock type, administrative capacity, stakeholder dependence, and power distribution should therefore be treated as candidate moderators rather than background noise.

The propositions would be weakened if the same governance configuration produced stable results across materially different conditions or if adaptation proved unrelated to safeguard preservation.

Implications for public management theory

The model contributes by connecting rather than collapsing four public-management perspectives. Complexity theory foregrounds emergence and nonlinear interaction [7]. Metagovernance explains coordination among governance modes [25]. Relational public administration emphasizes situated interaction [28]. New Public Governance directs attention to the internal capacities needed to sustain external collaboration [26].

Collaborative resilience is proposed as the linking capability: the maintenance of governability across these levels under change. This reframes PPP governance away from a static choice between hierarchy, contract, and trust. It also separates resilience from conventional project performance. A partnership may meet selected output targets yet remain institutionally fragile, while temporary performance disruption need not imply breakdown if governance can adapt legitimately. The theoretical claim is therefore about governance capacity, not a superior procurement form or universal pathway to performance.

Implications for PPP design and oversight

For PPP design, the model suggests building explicit room for governed adaptation rather than attempting to anticipate every contingency. Longitudinal evidence shows that governance can evolve substantially [4], while boundary-spanning research indicates the importance of interorganizational interfaces and perceived contractual fairness [17]. Crisis renegotiation evidence further supports treating adjustment procedures as governance processes rather than technical clauses [22].

Oversight should likewise avoid equating intensity with quality. Administrative controls may generate burden [12], public-value obligations remain plural [21], and collaborative performance management entails attribution and learning difficulties [30]. A defensible oversight architecture would therefore combine auditable contractual baselines, relational diagnostics, structured escalation, stakeholder-sensitive safeguards, and mechanisms for interpreting performance change. These are design considerations, not proven prescriptions. Their usefulness will depend on sectoral regulation, administrative capacity, legal authority, information quality, and the distribution of bargaining power.

Future research

The central empirical challenge is to observe governance change rather than infer it from cross-sectional associations. Longitudinal designs should track contractual amendments, relational quality, boundary-spanning activity, stakeholder conflict, performance signals, and renegotiation across lifecycle stages. This would test whether complementarity is stable or whether governance modes substitute for one another under different disruptions.

Multilevel research is also needed. Actor-level trust should not be treated as project resilience, and market-level institutional maturity should not be treated as project governance. Comparative studies across sectors and jurisdictions could examine whether the proposed propositions survive variation in regulatory regimes, political exposure, contract duration, and service criticality. Configurational methods may be useful where multiple pathways are plausible, while process tracing could test temporal sequences around disruption and renegotiation.

Strong tests should permit rejection. The model would require revision if safeguard preservation were unrelated to resilient adaptation, if governance complementarity showed no contextual variation, or if simpler single-mode explanations consistently accounted for observed trajectories.

Limitations

This article synthesizes heterogeneous evidence spanning PPPs, infrastructure projects, collaborative governance, public-private collaborations, and adjacent partnership settings. Definitions of performance, sustainability, legitimacy, relational quality, and governance differ across those literatures, limiting direct comparability [1]. Relational evidence is also heterogeneous in construct specification [14], while resilience-oriented PPP research remains contextually diverse [23].

Several empirical foundations are cross-sectional or case-based, so temporal and causal ordering cannot be assumed. Evidence transferred from government digitalisation, circular-economy collaboration, city-university partnerships, and collaborative performance management is used only to illuminate mechanisms or boundaries, not to claim direct PPP effects. The proposed model consequently remains a theory-building synthesis. Its constructs require discriminant measurement, its pathways require longitudinal testing, and its boundary conditions may prove incomplete. Collaborative resilience should therefore be treated as a falsifiable organizing concept rather than an established property of PPPs.

Conclusion

Contractual alignment is necessary to PPP governance but insufficient to explain how partnerships remain governable under institutional complexity, stakeholder conflict, and disruption. This article proposes collaborative resilience as the capacity to combine formal coordination, relational interpretation, adaptive response, and public-accountability safeguards without assuming that any mechanism is universally superior. The model distinguishes resilient recalibration from fragility and breakdown and treats renegotiation as diagnostically ambiguous rather than inherently beneficial or defective.

Its contribution is conceptual: a multilevel account of conditional governance complementarity and its boundaries. The model does not establish causal effects, implementation effectiveness, or universal applicability. Its usefulness depends on whether future comparative, longitudinal, and multilevel research can discriminate its constructs, test its propositions, identify failure conditions, and show when preserving collaboration serves—or conflicts with—legitimate public obligations.

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