East Journal of Human Science
ISSN: 3079-9384
Volume 2, Issue 2
Publisher: East Publication & Technology
DOI: https://doi.org/10.63496/ejhs.Vol2.Iss1.247

Aligning Infrastructure Investment with Sustainable Tourism in Oman: A Theoretical Framework Guided by Vision 2040

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Received: 02/01/2026, **Revised**: 12/01/2026, **Accepted**: 29/01/2026, **Published**: 01/03/2026

***Abstract*:**

This study develops a vision-aligned conceptual framework explaining how infrastructure investment portfolios translate into sustainable tourism outcomes in emerging destination contexts, with particular relevance to Oman. Using an integrative literature review and theory-building synthesis, the paper positions Infrastructure Investment Domains (IID) as the primary investment inputs and argues that sustainability returns are contingent on Orchestration Mechanisms (OM) and Value Activation Capability (VAC). Conceptual results include: (1) a typology of IID covering physical access and mobility, utilities and basic services, digital and smart infrastructure, environmental protection systems, and socio-cultural/place-supporting assets; (2) specification of OM as cross-agency alignment, portfolio governance, public–private partnership design, and performance monitoring that convert capital inputs into service quality and destination experience improvements; and (3) specification of VAC as a dynamic capability enabling destinations to bundle, adapt, and scale infrastructure value under sustainability constraints and shifting demand. The framework is formalized through five testable propositions linking IID to Sustainable Tourism Outcomes (STO) directly and indirectly via OM, while modeling VAC as a conditioning capability that strengthens these pathways. The paper also clarifies boundary conditions—such as institutional quality, regulatory capacity, stakeholder coordination, and strategic alignment with national visions (e.g., Oman Vision 2040)-that determine when infrastructure portfolios yield net sustainability gains. It also highlights policy trade-offs and sequencing. The study contributes by consolidating fragmented evidence into a coherent causal logic, offering measurement implications and an empirical agenda for mixed-method and longitudinal validation, and providing practical guidance for prioritizing infrastructure investments that enhance competitiveness without compromising ecological integrity and socio-cultural equity.

***Keywords*: Sustainable tourism, Infrastructure investment, Governance orchestration, Systems Theory, Resource-Based View, Oman Vision 2040, theory building**

1 .Introduction

Globally, tourism is recognized as a pivotal driver for achieving the Sustainable Development Goals (SDGs). The strategic investment in infrastructure is central to this potential, yet the precise causal pathways through which such investments translate into balanced and sustainable outcomes-spanning economic, environmental, socio-cultural, and resilience dimensions-remain inadequately specified in both policy and academic discourse (UNWTO & UNDP, 2017). While infrastructure undeniably enables access, its broader role in shaping destination competitiveness, resource efficiency, and long-term adaptability is profound (Dwyer & Kim, 2003; Ritchie & Crouch, 2003).

Despite its systemic nature, academic research often examines tourism infrastructure in a fragmented manner, focusing on single components such as transport networks or standalone facilities. This siloed approach fails to conceptualize infrastructure as an integrated system, thereby obscuring critical synergies-for instance, between mobility, heritage, and digital assets-and the governance capabilities required to orchestrate them (Boers & Cottrell, 2007; Khadaroo & Seetanah, 2008). Recent scholarly syntheses reaffirm that infrastructure and institutions are core determinants of sustainable tourism but concurrently highlight a persistent gap in coherent, theory-driven models that can explain their integrated impact (Goffi et al., 2019; González-Rodríguez et al., 2023).

This gap is particularly salient in vision-led emerging economies. In such contexts, long-term national visions for instance (Oman Vision 2040) establish strategic priorities and performance targets that should, in principle, guide the selection, spatial distribution, and evaluation of infrastructure portfolios. However, these visions are often cited descriptively as background context rather than being analytically embedded within theoretical frameworks for destination sustainability (UNWTO, 2018). Nowhere is this more evident than in the Gulf region, where ambitious, large-scale investment programs pursue economic diversification and regional balance, yet limited research connects integrated infrastructure portfolios and their governance to explicit vision alignment and measurable sustainability outcomes.

To address this theoretical deficit, this paper develops a conceptual framework guided by Oman Vision 2040. The Vision provides a pertinent setting, explicitly prioritizing sustainability, innovation, cultural integrity, and regional balance, supported by a robust framework for monitoring progress (Oman Vision 2040 Implementation Follow-up Unit, 2020). Concurrently, sectoral analyses underscore tourism's strategic role in diversification and employment, further elevating the importance of how its underlying infrastructure is planned and governed (World Travel & Tourism Council, 2023).

The identified research gap manifests in three specific deficiencies: (i) infrastructure is rarely operationalized as a system-level construct that captures cross-domain integration beyond isolated assets; (ii) theoretical lenses from Systems Theory and the Resource-Based View (RBV) are seldom combined to explain how integrated portfolios, coupled with governance capabilities, generate durable and hard-to-imitate sustainability advantages; and (iii) vision alignment is typically treated as narrative context rather than a theorized construct that actively steers portfolio configuration and performance evaluation (Boers & Cottrell, 2007; Goffi et al., 2019; González-Rodríguez et al, 2023).

To bridge this gap, this paper proposes a novel, vision-aligned theoretical framework that reconceptualizes tourism-related infrastructure as an orchestrated "system of systems" and a strategic resource bundle. We define four core constructs-Infrastructure Investment Domains (IID), Orchestration Mechanisms (OM), Sustainable Tourism Outcomes (STO), and Vision 2040 Alignment (VAC)-and integrate principles from Systems Theory and the RBV to explicate their interrelationships and boundary conditions, yielding a set of testable propositions (Barney, 1991; Casagrandi & Rinaldi, 2002).

Methodologically, this study employs a narrative and integrative conceptual review to synthesize fragmented evidence into a coherent model, adhering to established guidelines for theory-building research (Torraco, 2005; Snyder, 2019). The remainder of the paper is structured as follows: Section 2 reviews the pertinent literature and further motivates the research gap. Section 3 details the review methodology. Section 4 presents the proposed theoretical framework. Section 5 states the derived propositions. Sections 6 through 10 discuss the implications, limitations, and future research directions, and Section 11 concludes.

2. Literature Review and Theoretical Background

This section synthesizes the literature across four key domains to establish the theoretical foundation for the study and precisely identify the research gap.

2.1 Tourism Infrastructure: From Discrete Assets to an Integrated System

Tourism infrastructure is defined as the interconnected complex of physical, environmental, digital, cultural, and institutional assets that collectively enable and shape destination performance (Dwyer & Kim, 2003; Ritchie & Crouch, 2003). While traditionally examined through its discrete components-transport, utilities, or cultural facilities-contemporary scholarship increasingly recognizes its systemic nature, where synergies between domains (e.g., mobility-heritage-digital) and the governance required to coordinate them are critical for sustainability (Boers & Cottrell, 2007; Khadaroo & Seetanah, 2008).

In policy discourse, infrastructure is positioned as a core enabler of the Sustainable Development Goals (SDGs), with recent syntheses emphasizing its role in climate action, inclusive growth, and building resilient destinations (UNWTO & UNDP, 2017; OECD, 2025). Empirically, studies continue to link infrastructure to competitiveness

using advanced indices and structural models (Purwono, 2024). However, a significant limitation persists, infrastructure is often operationalized via discrete indicators (e.g., airport capacity, number of hotels) rather than as a holistic, system-level construct that captures cross-domain integration and interdependencies (Munir et al., 2025).

2.2 Vision-Led Development: The Context of Oman and the Gulf

In Gulf Cooperation Council (GCC) states, long-term national visions provide the strategic blueprint for massive infrastructure programs aimed at economic diversification, regional balance, and sustainability. However, academic treatment of these initiatives has largely been descriptive, cataloging projects without embedding them in a theory-driven logic that explains how infrastructure portfolios contribute to overarching vision goals (Goffi et al., 2019; González-Rodríguez et al., 2023).

Oman Vision 2040 offers a salient case. It explicitly articulates priorities around sustainability, innovation, cultural integrity, and regional balance, supported by public indicator frameworks for monitoring progress (Oman Vision 2040 Implementation Follow-up Unit, 2020). Sector outlooks reinforce tourism's anticipated contribution to GDP and employment, heightening the strategic importance of aligning infrastructure decisions with vision targets (World Travel & Tourism Council, 2024-2025). While Oman-focused studies exist, they often address development pathways and community perceptions from a policy-oriented perspective, lacking a system-theoretical foundation that can generalize findings (Tabishat et al., 2021; Ravikumar, 2022).

2.3 Theoretical Lenses: Systems Theory and the Resource-Based View

To address this conceptual shortcoming, this study integrates two complementary theoretical perspectives:

2.3.1 Systems Theory

Systems Theory conceptualizes tourism destinations as complex, adaptive socio-ecological-technical systems characterized by interdependence, feedback loops, and non-linear dynamics (Hartman, 2023). Recent research employs Complex Adaptive Systems (CAS) perspectives to explain emergent patterns and coordination challenges in tourism governance, underscoring the necessity of viewing infrastructure not as isolated assets, but as an integrated "system of systems" where the whole is greater than the sum of its parts (Khalilzadeh, 2024; Khudair, 2024). This lens is crucial for understanding how different infrastructure domains interact to produce systemic outcomes.

2.3.2 Resource-Based View (RBV)

The Resource-Based View (RBV) explains sustained competitive advantage through strategic resources that are Valuable, Rare, Inimitable, and Non-substitutable (VRIN) (Barney, 1991). Recent extensions in tourism examine how unique resources and dynamic capabilities-particularly in green innovation-translate into superior performance (Simarmata et al., 2022; Iriani et al., 2024). Through an RBV lens, an orchestrated configuration of tourism infrastructure instance (integrated mobility, protected heritage, digital platforms) can be conceptualized as a strategic, context-specific resource bundle that is difficult for competitors to imitate. Emerging applications of the "natural-resource-based view" further strengthen this logic by linking environmental stewardship directly to competitive advantage (Zhang et al., 2024).

2.4 Synthesis and Research Gap

A critical synthesis of the extant literature reveals a coherent narrative of theoretical and conceptual shortcomings. While the individual importance of tourism infrastructure, national visions, Systems Theory, and the Resource-Based View is well-established, their integration remains fundamentally elusive. This divergence manifests in three interconnected deficiencies that collectively define the core research gap. First, the prevailing approach to infrastructure suffers from conceptual fragmentation; it is consistently treated as a collection of discrete assets rather than a synergistic, system-level construct. Second, there is a state of theoretical isolation, where Systems Theory and the RBV operate in parallel. This prevents a unified explanation of how infrastructure functions simultaneously as a complex adaptive system and a strategic resource bundle capable of delivering a durable

competitive advantage. Finally, and most critically for vision-led contexts like Oman, strategic alignment is under-theorized. Vision documents are often used as descriptive backdrops rather than being operationalized as an analytical construction that actively steers the configuration of infrastructure portfolios and the evaluation of their performance. It is precisely at the intersection of these three gaps that this study positions its theoretical contribution.

Table 1. Summary of key literature clusters on tourism infrastructure and their main limitations

Main limitation	Example sources	Typical focus	Cluster
Treat transport as isolated factor; limited integration with other infrastructure domains or sustainability dimensions.	Prideaux (2000); Khadaroo & Seetanah (2008)	Transport infrastructure and destination access, flows	Transport-focused studies
Strong on local tools, but conceptualization remains project-centric; infrastructure not framed as a system-level strategic asset.	Boers & Cottrell (2007); selected destination case studies	Specific projects, GIS/planning tools, site-level sustainability	Project- / facility-based & planning studies
Descriptive and normative; lack a formal theoretical model linking infrastructure portfolios to sustainable tourism outcomes.	Oman Vision 2040 (2020); WTTC (2023); Tabishat et al. (2021)	Vision 2040, diversification goals, infrastructure and tourism priorities	Policy and vision documents (Oman & Gulf)
Use discrete indicators; do not integrate Systems Theory, RBV, and national vision alignment into a unified framework.	Munir et al. (2025) and related work	Links between infrastructure, institutions, satisfaction, sustainability	Emerging sustainability & institutional studies

As summarized in Table 1, existing contributions are organized into a small number of valuable but isolated clusters. None offers an integrated, vision-aligned, system-level conceptualization of tourism-related infrastructure suitable for guiding sustainable tourism development in Oman.

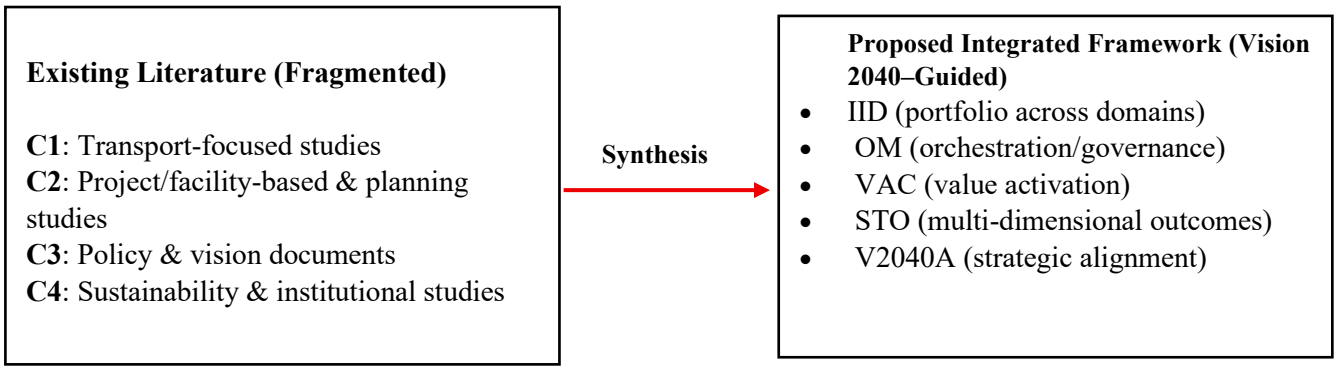

Figure 1. Conceptual map of fragmentation in tourism-infrastructure studies and the proposed integrated, Vision-aligned framework

Figure 1 contrasts four fragmented clusters of existing literature-transport-focused studies, project-based and planning contributions, policy and vision documents, and sustainability/institutional studies-with the integrated framework advanced in this paper. The proposed framework synthesizes insights from these clusters into a system-level, RBV-informed model in which infrastructure investment domains, orchestration mechanisms, and sustainable tourism outcomes are explicitly aligned with Oman Vision 2040.

3. Methodological Approach

This study employs a narrative and integrative conceptual review to develop a novel theoretical framework. The primary objective is to synthesize fragmented literature and construct a coherent model that explicates the relationship between infrastructure investment and sustainable tourism outcomes, explicitly aligned with Oman Vision 2040. The methodology adheres to established protocols for theory-building reviews, which emphasize conceptual integration, iterative analysis, and the structured synthesis of diverse sources (Torraco, 2005; Snyder, 2019).

A systematic literature search was conducted across major academic databases, including Scopus, Web of Science, ScienceDirect, Taylor & Francis Online, and Emerald Insight, supplemented by citation tracking via Google Scholar. The search strategy combined keywords from core conceptual domains, namely tourism infrastructure (using terms such as "tourism infrastructure" and "Gulf tourism development"), sustainability and vision (including "sustainable tourism" and "Oman Vision 2040"), and theoretical foundations (encompassing "systems theory" and the "resource-based view"). The review prioritized contemporary research to capture the evolving discourse in the field while retaining seminal theoretical works for their foundational importance. This dual approach ensured the framework is both theoretically grounded and informed by current scholarly developments. Furthermore, key institutional reports from authoritative sources-such as the UNWTO, WTTC, and the Oman Vision 2040 Implementation Follow-up Unit-were incorporated to anchor the framework in relevant policy and strategic contexts.

The analysis followed a structured, multi-stage process summarized in Figure 2. After identification and screening against explicit inclusion/exclusion criteria, the retained literature was organized into thematic clusters for instance (transport/mobility, policy/vision, theoretical contributions). These clusters were then systematically compared to diagnose the core research gaps-namely, conceptual fragmentation, theoretical isolation, and under-theorized vision alignment. The final stage involved theoretical synthesis, where insights from across the clusters were integrated to develop the proposed Vision 2040-aligned framework, which conceptualizes tourism infrastructure as an integrated portfolio governed through orchestration mechanisms.

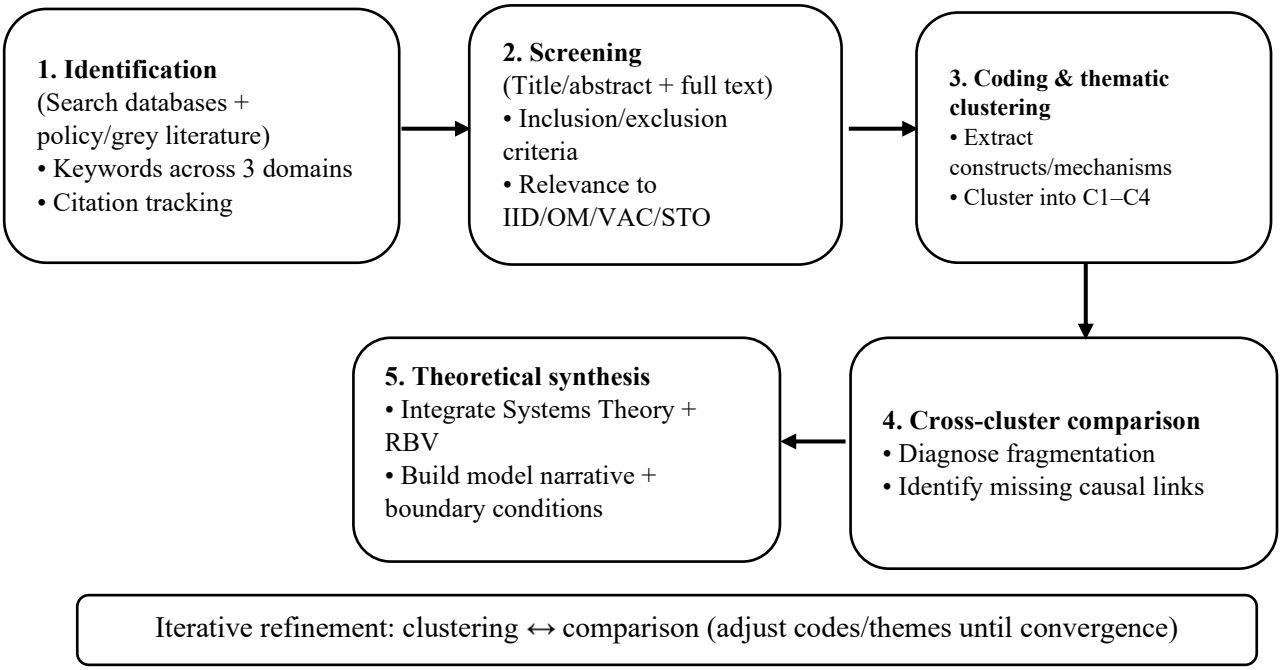

Figure 2. Narrative and integrative review process underpinning the proposed framework.

This structured, five-stage process outlined in Figure 2-from literature identification and screening to thematic clustering, cross-cluster comparison, and final theoretical synthesis-enabled a systematic distillation of insights from a fragmented body of literature. The resultant synthesis moves beyond descriptive analysis to produce our core theoretical contribution: the Vision 2040-aligned framework, which is presented in the following section. This framework explicitly addresses the identified gaps by conceptualizing infrastructure as an integrated system, combining the lenses of Systems Theory and RBV, and operationalizing vision alignment as a central construct.

4. Proposed Theoretical Framework

This paper advances a Vision 2040-aligned theoretical framework that reconceptualizes tourism infrastructure in Oman not as discrete projects, but as an interdependent and strategically governed portfolio. Rather than assuming a direct "build-and-benefit" logic, the framework specifies how infrastructure investment domains are converted into sustainable tourism outcomes through two complementary conversion logics: (i) governance orchestration and (ii) value activation capability, both operating under the strategic steering of Oman Vision 2040 alignment. This positioning is consistent with destination competitiveness scholarship which treats infrastructure, policy coordination, and long-run stewardship as jointly shaping destination performance. (Dwyer & Kim, 2003; Ritchie & Crouch, 2003).

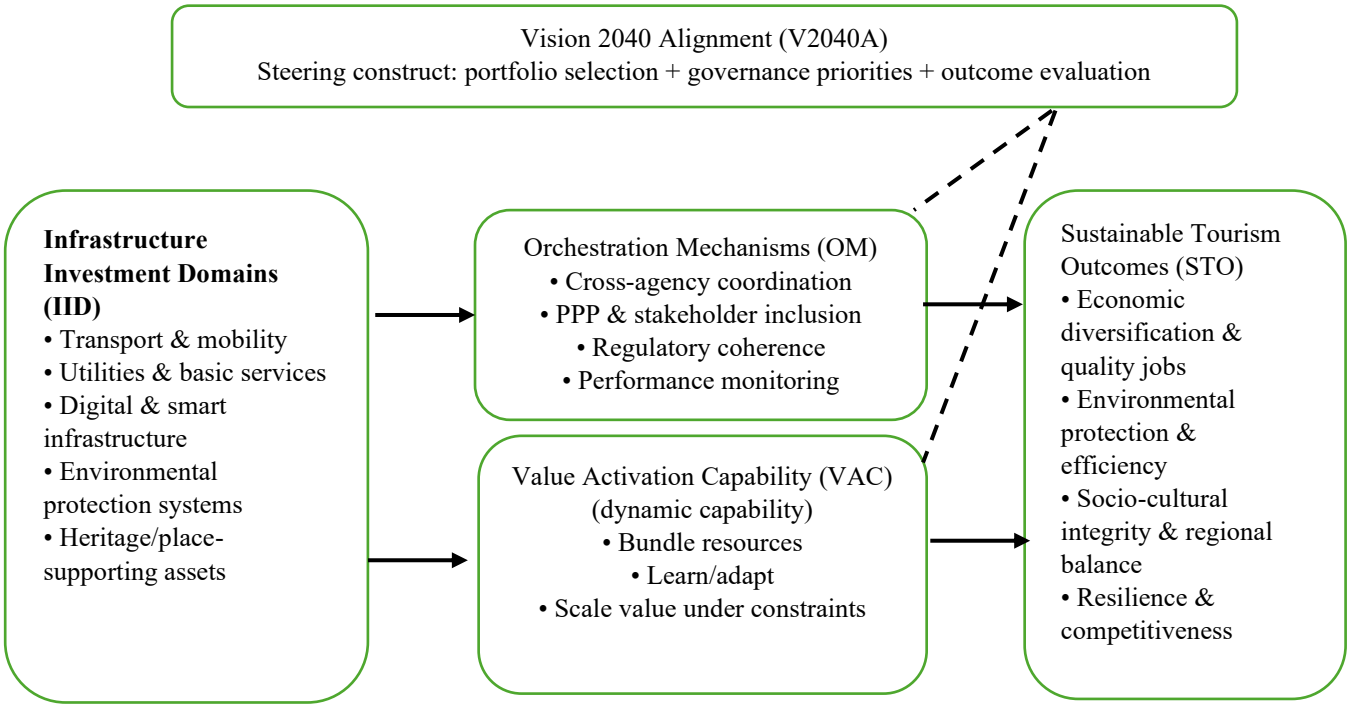

Figure 3: summarises the model architecture and the proposed relationships; the sub-sections below define each construct and justify the linkages.

Infrastructure Investment Domains (IID) represent the interdependent portfolio of tourism-relevant infrastructure that shapes destination performance across multiple functional layers. In line with established destination competitiveness perspectives, IID is treated as a bundled system spanning: (i) transport and mobility, (ii) utilities and basic services, (iii) digital and smart infrastructure, (iv) environmental protection systems, and (v) heritage and place-supporting assets. (Dwyer & Kim, 2003; Ritchie & Crouch, 2003; Boers & Cottrell, 2007).

Crucially, IID is conceptualized at the system level: the sustainability contribution of any single asset depends on complementarities with other domains (e.g., mobility-heritage–digital linkages) and on the destination's capacity to govern trade-offs such as congestion pressures, rebound effects, and resource stress. These systems framing

aligns with sustainable tourism guidance emphasising integrated planning, limits, and policy tool-mixes rather than isolated projects. (United Nations Environment Programme & World Tourism Organization 2005).

Orchestration Mechanisms (OM) capture the governance capabilities that coordinate and regulate the infrastructure portfolio so that capital inputs translate into coherent service improvements, destination-experience gains, and monitored sustainability performance. OM includes cross-agency alignment, regulatory coherence and standards, public-private partnership (PPP) design, stakeholder inclusion, and performance monitoring-elements repeatedly highlighted in tourism governance research as prerequisites for making sustainability operational. (Bramwell & Lane, 2011; Bramwell, 2011; Hall, 2011).

Within the framework, OM functions as a principal conversion pathway: when orchestration is weak, infrastructure expansion may generate adverse feedback loops such as capacity growth without safeguards, increasing ecological and socio-cultural pressures rather than delivering net sustainability gains. This concern is consistent with system-oriented sustainability reasoning, which stresses that interventions can create non-linear and unintended consequences when feedback and thresholds are not governed. (Casagrandi & Rinaldi, 2002; UNEP & UNWTO, 2005).

Value Activation Capability (VAC) is defined as a destination-level dynamic capability that enables actors to bundle, adapt, and scale the value of infrastructure assets under sustainability constraints and shifting demand. From a Resource-Based View (RBV) and dynamic capabilities standpoint, infrastructure becomes strategically valuable not merely by existence, but when it is co-specialised and activated through learning, coordination routines, and reconfiguration processes that competitors find difficult to imitate. (Barney, 1991; Teece et al., 1997).

VAC therefore explains why destinations with seemingly similar infrastructure portfolios can experience different sustainability returns due to differences in activation capability-such as digital service integration, adaptive visitor and crowding management, continuous maintenance and asset management, and destination-management learning. In the framework, VAC operates as a parallel conversion pathway from IID to outcomes, and it can be strengthened by effective orchestration (OM), because governance arrangements often supply the information systems, accountability, and cross-actor routines needed for continuous activation and adaptation. (Hall, 2011; Teece et al., 1997).

Sustainable Tourism Outcomes (STO) are conceptualized as a multi-dimensional performance construct spanning: (i) economic diversification and quality employment, (ii) environmental protection and efficiency, (iii) socio-cultural integrity and regional balance, and (iv) destination resilience and competitiveness. This operationalization reflects widely used sustainable tourism guidance that frames sustainability as a balanced set of outcomes rather than a single metric. (UNEP & UNWTO, 2005; UNWTO & United Nations Development Programme, 2018).

Accordingly, STO reflects both net gains and avoided losses: the objective is to generate economic value while containing ecological degradation and socio-cultural disruption through coherent planning, governance, and adaptive management. (UNEP & UNWTO, 2005).

To address the common critique that national visions are treated merely as narrative context, the framework explicitly theorises Vision 2040 Alignment (V2040A) as a steering construct that conditions the model. V2040A refers to the extent to which infrastructure selection, spatial distribution, governance priorities, and performance evaluation criteria are explicitly anchored to Vision 2040 sustainability and regional-balance objectives and to the institutional mandate assigned to follow-up and implementation. (Oman Vision 2040 Implementation Follow-up Unit, 2023; Royal Decree No. 100/2020).

In Figure 3, V2040A is positioned as an overarching conditioning force shaping: (i) how IID is configured as a portfolio, (ii) how OM is prioritised and institutionalized, and (iii) how STO is assessed against long-term targets rather than short-term expansion. The framework integrates a systems perspective with RBV/dynamic capabilities logic to explain both systemic dynamics and sustained performance. From a systems viewpoint, IID and OM constitute a complex adaptive destination system characterized by interdependence and feedback, where

interventions can generate non-linear effects that amplify or dampen sustainability outcomes. (Casagrandi & Rinaldi, 2002).

From an RBV/dynamic capabilities viewpoint, the orchestrated infrastructure–governance configuration becomes a strategic resource bundle when it is valuable, context-specific, and difficult to replicate; VAC specifies the capability component that converts assets into sustained and sustainable performance. (Barney, 1991; Teece et al., 1997).

Taken together, the framework clarifies the causal architecture: IID influences STO primarily through OM and VAC as complementary conversion pathways, while V2040A provides strategic steering that strengthens portfolio coherence and the accountability of outcome evaluation. This specification responds directly to fragmentation in infrastructure–tourism research by moving beyond isolated indicators toward a coherent, documented, and conceptually testable model for vision-led destination development. (Bramwell & Lane, 2011; Dwyer & Kim, 2003; Ritchie & Crouch, 2003).

5. Theoretical Propositions

Building upon the integrative framework in Figure 3, this study advances testable propositions articulating the causal pathways to sustainable tourism. The central proposition posits that treating infrastructure as an integrated portfolio across transport, environmental, digital, heritage, and institutional domains enables more balanced sustainability outcomes by activating complementarities and containing negative feedback.

Crucially, this relationship is mediated by orchestration mechanisms-cross-sector coordination, inclusive partnerships, and data-informed governance-which translate infrastructure investments into tangible benefits. Simultaneously, Vision 2040 alignment operates as a critical conditioning construct, strengthening the system by steering portfolio configuration and performance evaluation toward long-term strategic priorities over short-term gains.

Through the lens of the Resource-Based View, this orchestrated infrastructure-governance configuration, when context-specific and institutionally embedded, constitutes a strategic resource bundle that is valuable, rare, and difficult to imitate, thereby providing a foundation for durable competitive advantage and sustained tourism sustainability.

These propositions are formulated for empirical verification through methods capable of testing mediation and moderation effects, offering a clear pathway for future research to validate this theoretical framework.

To make the conceptual contribution explicit, the framework yields the following testable propositions (reported as conceptual results rather than statistical estimates):

P1. Infrastructure Investment Domains (IID) are positively associated with Sustainable Tourism Outcomes (STO), with stronger effects when investments are coordinated as a portfolio rather than delivered as isolated projects.

P2. Orchestration Mechanisms (OM)-including cross-agency coordination, standards, and public–private governance arrangements mediate the IID → STO relationship by translating capital inputs into operational and service-quality improvements.

P3. Value Activation Capability (VAC) mediates the effect of IID on STO such that infrastructure investments generate higher sustainability returns when destinations possess the capabilities to activate, bundle, and adapt infrastructure assets to evolving demand.

P4. Institutional quality and regulatory capacity positively moderate the IID → OM and OM → STO links; weaker institutions reduce the sustainability returns of infrastructure investments even when capital intensity is high.

P5. Vision and policy alignment (e.g., national sustainability strategies) positively moderate the IID → STO relationship by prioritizing projects that simultaneously enhance competitiveness and protect ecological and socio-cultural assets.

6. Conceptual Results

Because this study is conceptual, the results are reported as framework outputs derived from theory integration and synthesis. First, the paper consolidates infrastructure into a coherent set of investment domains and pathways (Table 1), clarifying how different infrastructures such as transport and utilities, digital connectivity, environmental management, heritage/public-space assets, and institutional/skills infrastructure, contribute to sustainability through distinct mechanisms and time horizons.

Second, the framework specifies an alignment logic between infrastructure and governance: sustainability gains are most likely when investment portfolios are matched with the destination's governance capacity, carrying-capacity constraints, and community acceptance. Misalignment such as rapid capacity expansion without environmental safeguards or local benefit-sharing, increases the risk of rebound effects such as congestion, resource stress, and social contestation.

Third, the synthesis operationalizes the 'results' in the form of measurable constructs and propositions (P1–P5) that can be tested in future studies. This includes guidance on potential measurement of IID (portfolio composition and quality), OM (coordination, standards, enforcement, and stakeholder inclusion), VAC (capability to bundle, learn, and adapt), and STO (economic viability, environmental integrity, and socio-cultural equity).

7. Discussion

This study provides a theoretical reframing by viewing tourism infrastructure not as a set of isolated projects, but as a coherent "system-of-systems" that requires strategic orchestration and direction through a national vision. The main scholarly value of the paper lies in its integrative logic, combining a macro-level systems perspective-focused on interdependence and feedback-with a strategic resource lens that explains how sustainable advantage can emerge when assets are organised and leveraged effectively. In addition, the framework treats Vision 2040 alignment not as descriptive background, but as an explicit steering construct (V2040A) that shapes how the model operates. By doing so, the paper addresses fragmentation in the literature and helps narrow the theory–practice gap by translating "vision talk" into a more usable and testable model.

The framework offers clear logic for unpacking the interaction between portfolio configuration (IID), governance quality (OM), strategic alignment (V2040A), and multi-dimensional outcomes (STO). It clarifies the overall architecture: orchestration mechanisms (OM) function as the key pathway through which integrated assets are converted into tangible value and outcomes, while alignment with Vision 2040 (V2040A) operates as the higher-order steering influence that keeps both investment choices and governance priorities consistently oriented toward strategic objectives. This logic also helps explain the frequent underperformance of project-centred approaches, which often suffer from weak orchestration and only superficial alignment.

Accordingly, the study reframes "tourism infrastructure" in vision-led contexts as more than neutral capital investment; it is a governed portfolio whose value depends on integration, coordination, and alignment. The model serves two purposes: it is diagnostic, enabling assessment of coherence and strategic fit in existing arrangements, and it is prescriptive, highlighting the types of integration, capabilities, and policy instruments needed to achieve intended outcomes.

Although the discussion is anchored in the Omani context, the framework remains relevant beyond its national setting. Its analytical usefulness is strongest in destinations where a credible long-term vision exists and where public investment plays a steering role. Under such conditions, the model supports comparative inquiry and provides a foundation for future empirical work, as outlined in Section 8, without diluting the paper's theoretical focus.

8. Implications

8.1 Theoretical Implications

This study contributes theoretically by connecting two influential but often separate streams of thinking. It brings together systems-oriented reasoning about coherence and feedback with a strategic perspective on how resources are bundled and leveraged to generate sustained value. A central conceptual step is to treat Vision 2040 alignment as an explicit steering construct (V2040A), rather than leaving it as contextual narrative, which helps account for performance differences across destinations. In addition, the framework supports the move from project-level reasoning toward portfolio-based assessment, and it formalises the model in a way that can guide future empirical examination.

8.2 Policy and Planning Implications for Oman

For Oman, the framework functions as a practical governance lens. It suggests shifting appraisal from the merits of individual projects to the coherence of the overall portfolio and its alignment with Vision 2040 objectives. Two priorities follow. First, orchestration capacity should be strengthened—especially cross-sector coordination, monitoring, and stakeholder inclusion—so that investment translates into coherent outcomes. Second, alignment criteria (V2040A) should be embedded into spatial planning, procurement processes, and performance dashboards so that infrastructure advances regional balance, environmental protection, and cultural integrity. Existing national follow-up and reporting practices provide a feasible basis for instrumenting such alignment and strengthening accountability.

8.3 Implications for Other Emerging Destinations

The framework also has value for other emerging destinations that pursue tourism development through long-term visions and substantial public steering. It offers a simple diagnostic approach organised around three questions: Is infrastructure treated as an integrated system rather than isolated projects? Do orchestration mechanisms exist to coordinate it effectively? Are investments explicitly aligned with visionary goals? When these conditions are present, the model supports cross-national learning and provides a practical route to move beyond fragmented project logics toward more coherent and durable outcomes.

9. Limitations

This paper is conceptual and therefore does not provide statistical or field-based evidence to validate the proposed framework or propositions. While the integrative review and synthesis were designed to capture multidisciplinary insights, narrative and integrative approaches remain susceptible to selection and interpretation bias, particularly when evidence is dispersed across tourism, infrastructure, and governance literatures. In addition, the framework is developed with an explicit focus on a vision-led development context (Oman Vision 2040), which may limit direct transferability to destinations with different institutional configurations, fiscal capacity, or governance arrangements. Finally, the measurement implications and suggested indicators are illustrative and require refinement through expert validation, pilot testing, and longitudinal or mixed-method empirical designs to establish reliability, validity, and causal directionality.

10. Future Research Directions

This framework establishes a foundational agenda for a cumulative research program. The immediate empirical priority lies in operationalizing its core constructs through rigorous psychometric development. This entails creating and validating compact measurement instruments: a multi-dimensional IID Integration Index capturing cross-domain synergy and spatial complementarity; an OM Capability Scale assessing coordination efficacy, stakeholder inclusion depth, and data-informed adaptive management; a VAC Alignment Index quantifying the explicit incorporation of vision priorities into appraisal systems and performance dashboards; and a composite STO Metric reflecting balanced economic, environmental, and socio-cultural outcomes. Equipped with these robust measures, scholars can employ advanced analytical techniques-such as Structural Equation Modeling

(SEM) to test the mediated pathways (P1-P3), panel data analysis to establish temporal precedence, and Qualitative Comparative Analysis (QCA) to identify causal configurations for sustainability success-while proactively addressing endogeneity through innovative research designs.

Beyond quantitative validation, a critical parallel avenue involves qualitative and comparative inquiry to elucidate the underlying mechanisms and boundary conditions of the framework. In-depth process-tracing within Oman and across comparable vision-led destinations can dissect the "black box" of orchestration, revealing how political will, institutional mandates, and stakeholder dynamics convert nominal alignment into substantive governance. Strategically designed comparative studies-leveraging natural policy experiments in the GCC or Global South-are essential for testing the framework's transferability and refining its scope conditions (P5). Such research should systematically investigate whether destinations that consciously implement infrastructure as a vision-guided, strategic resource bundle consistently outperform those adhering to fragmented, prestige-driven models, thereby moving from theoretical proposition to evidenced-based policy principle.

11. Conclusion

This study has articulated a fundamental theoretical shift in understanding tourism infrastructure, moving from a project-centric paradigm to a systemic, strategy-aligned model. By integrating the macro-perspective of Systems Theory with the strategic logic of the Resource-Based View, and crucially elevating Oman Vision 2040 from contextual narrative to an active steering construct (VAC), the framework presents a coherent account of how integrated infrastructure portfolios (IID) translate into sustainable outcomes (STO) through the critical mediation of governance capabilities (OM). The resulting propositions provide a falsifiable foundation for explaining how strategic coherence, not merely capital expenditure, dictates sustainability performance.

The contribution is thus dual-natured, delivering both theoretical refinement and contextual application. Theoretically, it redefines infrastructure as a synergistic resource bundle, explaining the pivotal roles of systemic integration and orchestration capabilities. Practically, it equips Omani policymakers with a diagnostic tool to enhance portfolio coherence, fortify governance capacity, and rigorously embed vision-alignment into the investment lifecycle, ensuring infrastructure substantively advances long-term national priorities over short-term imperatives.

Ultimately, this study repositions vision-led destinations as vital laboratories for theory generation. The immediate research imperative is the empirical operationalization and testing of the framework's constructs and causal propositions. Success in this endeavor will not only validate and refine the model but also provide a replicable blueprint for aligning ambitious national visions with tangible, sustainable development outcomes through strategic infrastructure governance, both in Oman and in analogous emerging economies worldwide.

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المواءمة بين استثمارات البنية التحتية والسياحة المستدامة في عُمان: إطار نظري موجه برؤية عُمان ٢٠٤٠

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الملخص:

تُطوّر هذه الدراسة إطارًا مفاهيميًا متسقًا مع الرؤى الوطنية يفسّر كيفية تحوّل محافظ استثمارات البنية التحتية إلى مخرجات سياحية مستدامة في سياقات الوجهات الناشئة، مع تركيز خاص على سلطنة عُمان. وبالاستناد إلى مراجعة أدبية تكاملية ومنهجية بناء نظرية، تضع الورقة «مجالات استثمار البنية التحتية (IID) بوصفها مدخلات الاستثمار الرئيسة، وتجادل بأن عوائد الاستدامة تتوقف على «آليات التنسيق (OM) وقدرة تفعيل القيمة (VAC). وتتضمن النتائج المفاهيمية ما يلي: (١) تقديم تصنيف لمجالات استثمار البنية التحتية يشمل: الوصول المادي والتنقل، والمرافق والخدمات الأساسية، والبنية التحتية الرقمية والذكية، وأنظمة الحماية البيئية، والأصول الداعمة للبُعد الاجتماعي-الثقافي والمكاني؛ (٢) تحديد آليات التنسيق باعتبارها مواءمةً عابرة للجهات، وحوكمةً للمحافظ الاستثمارية، وتصميم شراكات بين القطاعين العام والخاص، وأنظمة متابعة وتقييم الأداء، بما يُحوّل المدخلات الرأسمالية إلى تحسينات في جودة الخدمات وتجربة الوجهة السياحية؛ (٣) تحديد قدرة تفعيل القيمة كقدرة ديناميكية تمكّن الوجهات من تجميع قيمة البنية التحتية وتكييفها وتوسيع نطاقها في ظل قيود الاستدامة وتقلّبات الطلب. ويُصاغ الإطار عبر خمس قضايا نظرية قابلة للاختبار تربط مجالات استثمار البنية التحتية بنتائج السياحة المستدامة (STO) بصورة مباشرة وغير مباشرة من خلال آليات التنسيق، مع نمذجة قدرة تفعيل القيمة بوصفها قدرةً شرطية تعزّز هذه المسارات. كما توضّح الدراسة شروط الحدود مثل جودة المؤسسات، والقدرة التنظيمية، وتنسيق أصحاب المصلحة، والمواءمة الاستراتيجية مع الرؤى الوطنية (مثل رؤية عُمان ٢٠٤٠) التي تحدد متى تُفضي محافظ البنية التحتية إلى مكاسب صافية في الاستدامة. كذلك تُبرز المفاضلات والسياسات المرحلية ذات الصلة. وتسهم الدراسة في توحيد الأدلة المتناثرة ضمن منطق سببي متماسك، وتقديم دلالات قياسية وأجندة بحثية للتحقق التجريبي باستخدام مناهج مختلطة ودراسات طولية، فضلًا عن توفير إرشادات عملية لتحديد أولويات استثمارات البنية التحتية بما يعزز القدرة التنافسية دون الإخلال بالسلامة البيئية والعدالة الاجتماعية-الثقافية.

الكلمات المفتاحية: السياحة المستدامة، استثمار البنية التحتية، تنسيق الحوكمة، نظرية النظم، المنظور القائم على الموارد، رؤية عُمان ٢٠٤٠، بناء النظرية.