

Digital Tourism vs. Digitalized Tourism: A Conceptual Clarification

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Abstract Tourism literature frequently conflates "digital tourism" with "digitalization," causing severe measurement errors and endogeneity crises in empirical research. To resolve this conceptual stretching, this study draws a sharp ontological line between two distinct phenomena: digitalized tourism, where physical travel and corporeal presence remain non-negotiable baselines, and digital tourism, which delivers experiences exclusively through synthetic environments without physical mobility. Building on systems theory and Service-Dominant logic, we construct a nomological framework identifying three core mediating mechanisms—information efficiency, value chain upgrading, and governance optimization—to unpack how technology drives tourism quality. We find that while both paradigms share this feedback loop, they follow divergent pathways: one optimizes crowd physics in physical settings, while the other builds virtual value chains out of nothing. Finally, referencing European Smart Tourism policies, we highlight their contrasting resource demands, supplying policymakers with a tailored playbook for high-quality, sustainable development.

Keywords Digital Tourism; Digitalized Tourism; Conceptual Stretching; Mediating Mechanisms; Tourism Quality; Sustainability

1. Introduction

The synergistic evolution of digital technology and consumer demand has driven the deep digitalisation of the global tourism industry. From smart booking to AI-powered personalised recommendations, digital tools have gradually reshaped the tourism value chain, making internet connectivity and digital services essential prerequisites for modern tourism; digital integration has also become key to Destination Management Organisations (DMOs) enhancing their efficiency and competitive advantage. However, the actual contribution of digitalisation to the quality and sustainability of tourism development remains a problem. It has accelerated the expansion of global tourism on a massive scale, its effectiveness in terms of genuine value creation remains unclear, and it has even given rise to negative effects such as uneven spatial development, profound disparities in digital infrastructure (the "digital divide"), and the underperformance of certain capital-intensive smart tourism projects in generating expected economic and socio-cultural returns. These problems which have surfaced raise critical concerns among scholars and policymakers regarding whether

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there is a positive relationship between digitalisation and high-quality, sustainable destination development.

For a long time, the boundary between 'digital tourism' and 'tourism digitalization' has remained frustratingly blurred across academia and industry reports. We argue that this is far from a mere semantic debate; rather, it has fragmented existing empirical findings into contradictory positions. To break this theoretical deadlock, our first task here is to deconstruct and decouple these two concepts. Moving forward, by carving out a robust, mechanism-driven framework, this paper shifts the focus toward how digitalization functionally dictates the quality of tourism development across varying contexts.

The mechanism can be divided into two specific parts: 1) Spatial Realignment, whether digital interventions alleviate over-tourism or cause gentrification. 2) Economic Deceleration: whether these rapidly evolving technologies actually fit the pragmatic capabilities of local small-to-medium enterprises (SMEs).

This study contextualizes its contribution around two nodes. First, it untangles the current conceptual gridlock by drawing a clear line between two distinct paradigms. Second, the mechanism-based framework we present maps out the intricate chain reaction through which digitalization dictates tourism quality and sustainability. Pragmatically, these insights rescue policy design from generic formulas, offering actionable traction for resource allocation. This is particularly salient for pioneering European destinations like Málaga and Gothenburg. As 'European Capitals of Smart Tourism' grappling with data-driven governance, their ongoing struggle to balance tourist influx, community well-being, and destination resilience will find immediate conceptual backing in our framework.

2. Literature Review

2.1 Definitions of Digital Tourism

While the buzzword "digital tourism" fills the current literature, classic papers actually partition the concept into two isolated camps.

The first camp takes a purely functional approach. Early groundwork by Buhalis and Law [1], later expanded by Zeqiri et al. [2], treats digital tools merely as an operational upgrade for physical travel. In this view, booking apps, digital marketing, and CRM systems serve one practical goal: cutting down transaction costs, curing information asymmetry, and making the real-world supply chain run smoother. Here, technology is a supporter, not the destination.

By sharp contrast, a second wave of research turns this instrumental logic on its head. Focusing on immersive setups like VR, AR, and metaverse spaces, scholars argue that digital environments create a brand-new ontological experience [3, 2]. For this group, digital tourism does not facilitate a physical trip—it substitutes for it, allowing users to roam synthetic destinations without ever packing a bag.

Recently, frameworks like "Tourism 4.0" have stepped in as peacemakers, trying to merge these parallel tracks into a unified cyber-physical ecosystem [4, 5]. Yet, this theoretical patchwork has not solved the underlying chaos. Labeling both a tourist scanning a QR code at a physical gate and an avatar buying virtual real estate as "digital tourism" is conceptually lazy. This umbrella term jams two completely different

phenomena into the same box, messing up our empirical measurements and stalling theoretical progress.

2.2 Digitalisation in Tourism Studies

In contrast to the chaotic debates over "digital tourism," scholarship on tourism digitalization enjoys a tighter consensus. Rather than a mere tech upgrade, it is studied as a socio-technical wave that radically reshapes how travel is produced, sold, and consumed [6].

This shift did not happen overnight. The industry's tech blueprint evolved from early aviation booking systems (CRS and GDS) into today's heavy-duty ecosystems driven by AI, cloud computing, and the IoT [1, 4]. These networks do not just pass data around; they hyper-personalize services and force historically isolated stakeholders into a shared loop.

Looked at from the ground up, this digital push rewrites economics at multiple depths. For individual firms, Transaction Cost Economics (TCE) explains the immediate payoff: digitalization slashes search and coordination costs, taming the information gaps between hosts and guests [2]. Zooming out to the broader industry, it has birthed platform capitalism and the sharing economy. Heavyweights like Airbnb and Uber completely decentralized traditional supply lines, reconfiguring the global value chain from scratch [6].

Yet, critical scholars warn that digitalization is no magic bullet. Its dividends are deeply uneven, leaving tech-poor geographic pockets behind. Furthermore, hyper-digitalization introduces an ugly corporate downside: severe data privacy leaks, algorithmic biases, the iron-grip monopoly of global OTAs, and the social exclusion of communities locked outside the digital fence. Ultimately, digitalization cannot be managed with a one-size-fits-all checklist; it remains a volatile, highly context-dependent process.

2.3 Conceptual Confusion in Existing Literature

While the theoretical line between a digital process and a digital product seems clear, contemporary literature constantly blurs it. This messy overlap triggers three major headaches for current research.

To begin with, terminology has run wild. Labels like e-tourism, smart tourism, and digital tourism are tossed around as if they mean the exact same thing [7, 4]. We lose critical nuances this way: e-tourism was historically about e-commerce transactions, while smart tourism focuses on bringing IoT and sensors onto the physical destination floor. Smushing them together simply deepens the conceptual fog.

Worse yet, this confusion creates a massive methodological blind spot. Many studies fail to distinguish whether technology is acting as a backstage supporting tool or the front-stage experiential medium. Take Virtual Reality (VR) as an example. In one empirical model, VR is treated merely as a pre-trip marketing gimmick; yet in a parallel paper within the same journal, it is operationalized as a flat-out substitute for physical travel [2]. This moving goalpost makes variable measurement in quantitative research a nightmare, resulting in mismatched datasets that cannot be compared.

Ultimately, this lack of a clean framework leaves our findings fractured. Without drawing a hard line between a tech-augmented physical process and a fully virtual product, it becomes practically impossible to isolate real causal mechanisms or trace where value is actually created. Fixing this ambiguity is not just an academic exercise; it is an urgent cleanup job that must happen before modern tourism research can claim empirical validity.

2.4 Sustainability and Tourism Quality

Alongside technology, sustainability has become a non-negotiable anchor in tourism research. Following the classic Brundtland definition, development must serve today's travelers without stripping future generations of their own ecological and structural survival tools [8, 5]. In tourism, this means balancing the "triple bottom line": economic growth, eco-conservation, and community well-being [6]. While mass travel generates jobs, it also triggers heavy negative side-effects, from environmental degradation to local cultural disruption.

Digitalization enters this arena as a wild card. True, tech tools can serve as eco-shields: smart tracking systems and predictive analytics let managers monitor destination carrying capacities in real-time, while digital platforms allow for more inclusive, community-led decision-making [5]. Furthermore, walking through a vulnerable heritage site via VR or AR presents a genuine alternative, taking the physical friction off fragile ecosystems [2].

Yet, technology remains a double-edged sword. The iron-grip of algorithmic marketing often backfires; viral visibility and recommendation engines funnel hyper-demand into viral, "Instagrammable" hotspots overnight, drastically worsening overtourism. These messy, conflicting impacts show that we can no longer treat digitalization as a generic cure-all. We need a far tighter grip on how tech actually intersects with long-term sustainability.

2.5 Research Gaps

When we look closely at this literature, the academic landscape remains split by four critical blind spots:

The Conceptual Fog: There is still no clear ontological line separating digital tourism (escapism through a screen) from digitalized tourism (physical travel smoothed out by tech).

The Mechanism Vacuum: While papers constantly map correlations between tech and tourism performance, they rarely explain the underlying causal engines—the how and why—behind this structural shift.

Fragmented Sustainability: Most studies treat sustainability like a cafeteria menu, picking either carbon tracking or cost reduction in isolation, rather than mapping the system-level trade-offs across all three pillars.

The Micro-Macro Disconnect: We lack a framework that ties subjective, micro-level tourist satisfaction together with objective, macro-level destination survival.

To bridge these gaps, this study systematically untangles the messy boundary between digital and digitalized tourism. From there, we build a mechanism-based framework to track how different digital pathways alter tourism quality under a

comprehensive sustainability lens.

3. Conceptual Clarification

3.1 Existing Definitions of Digital Tourism

The growing scholarly focus on "digital tourism" has paradoxically clouded its conceptual boundaries, leaving the literature fractured. What we are witnessing is a classic case of "conceptual stretching" [9]: by trying to label every tech-driven tourism phenomenon under a single umbrella, the term has lost its analytical edge.

On one side of the debate, mainstream research adopts a purely instrumental view. Scholars like Buhalis and Law [1] treat digital tourism merely as traditional travel powered by ICT upgrades—think booking apps, mobile payments, or smart airport infrastructure. Here, technology is just a vehicle to smooth out the physical supply chain.

Turn the page, however, and the definition shifts to an entirely different ontological ground. Another camp argued that digital tourism isn't about making physical travel easier; it is about replacing it through immersive tech like VR, AR, and MR [3, 10]. This split means the same term is expected to explain both a tourist ordering food on an app in Rome, and a user sitting on a couch in New York exploring a virtual Colosseum.

This definitional chaos is further complicated by fuzzy systems-level jargon like "Smart Tourism" or "Tourism 4.0" [4, 5]. By packing ecosystems and cyber-physical value co-creation into the mix, the conceptual core has become even more diluted. Ultimately, blending technology-enhanced physical journeys with fully virtualized experiences under "digital tourism" is theoretically counterproductive. It creates an empirical dead-end where the concept attempts to measure everything, yet validly captures nothing.

3.2 Defining Digitalized Tourism

To resolve this conceptual ambiguity, this study conceptualizes digitalized tourism as a tech-augmented framework where physical travel remains the non-negotiable baseline. Unlike its fully virtual counterpart, digitalized tourism does not exist in a digital vacuum; it demands corporeal presence and physical mobility. Here, digital platforms, big data systems, and smart services do not replace the journey—they optimize it. By smoothing out friction in ticketing, access management, and wayfinding, this technological integration cuts transaction costs for tourists while supplying destination managers with the real-time data flows needed to coordinate fragmented stakeholders and secure safer tourism environments.

What fundamentally defines this "phygital" journey is a triad of overlapping attributes, starting with embeddedness. Rather than displacing traditional tourism, digital technologies are woven directly into the existing physical infrastructure. A tourist might rely on location-beacons for navigation or digital wallets for frictionless checkout, yet the core of their experience remains stubbornly tied to the physical space.

This ties directly into the second attribute: complementarity. Under the lens of Task-Technology Fit (TTF) theory, digital interventions succeed only when they align with the tourist's immediate functional needs. Instead of substituting direct somatic engagement with a destination, the technology acts as a symbiotic layer. Pre-trip booking systems alleviate logistical anxiety, and location-based services (LBS) enhance

on-site exploration, but the meat of the experience is still the unmediated physical contact with the environment.

Finally, this symbiosis drives an efficiency orientation across tourism organizations. By leveraging predictive analytics and intelligent resource planning, firms move away from guesswork toward agile, data-driven decisions. This allows for dynamic pricing and optimized resource allocation, ensuring that operational performance scales up precisely as market demands fluctuate.

3.3 Defining Digital Tourism (Virtual Tourism)

Shifting the lens to digital tourism reveals a sharp ontological break: here, physical travel is entirely out of the picture. Rather than acting as a backend support tool, technology serves as the core medium and the final destination. The experience unfolds exclusively within synthetic environments—ranging from virtual reality (VR) and digital twins to highly immersive online platforms.

This absence of physical mobility creates what can be termed a "spatiotemporal emancipation." By stripping away the geographic and temporal friction built into traditional travel, digital tourism rewires how people participate in tourism. It opens backdoors to fragile ecosystems, restricted military zones, or extinct cultural heritage sites that are otherwise locked away. More importantly, it democratizes exploration. When real-world travel is paralyzed—whether by economic barriers, physical disabilities, global pandemics, or environmental mandates—virtual environments fill the vacuum, offering a radically sustainable alternative to carbon-heavy physical aviation.

To map this shifting landscape, we can categorize digital tourism into a fluid taxonomy rather than a rigid set of boxes. At its most immediate level is virtual destination tourism, where users bypass physical airports entirely, instead using HMDs or 360-degree interactive telepresence to roam distant geographies.

Close behind is virtual cultural tourism, a domain where museums and UNESCO sites use high-fidelity digital exhibitions to preserve and democratize access to global cultural capital.

The most disruptive frontier, however, is the rise of metaverse-based tourism. These persistent, decentralized 3D landscapes allow users—operating via avatars—to do more than just stare at a digital rendering of a city. They buy virtual assets, trade NFTs, and cross paths with other global travelers in real time. Though still in its infancy, metaverse tourism signals a paradigm shift from passive digital observation to active virtual inhabitation and co-creation.

3.4 Comparison and Conceptual Distinction

The line splitting digitalized tourism from digital tourism comes down to a fundamental question: does technology simply facilitate the journey, or does it become the journey itself? Stated plainly, digitalized tourism uses technology as a supportive tool to smooth out a physical trip, whereas digital tourism flips the paradigm entirely, turning the digital environment into the actual destination.

We can untangle this knot by looking at three practical dimensions: the experience itself, the space it occupies, and what the technology actually does. Experientially, digitalized tourism keeps the tourist's feet firmly on the ground; apps and digital

systems are just there to grease the wheels of convenience. Digital tourism, by contrast, swaps out physical presence for "telepresence," completely altering how a user senses a destination.

Spatially, this creates a major structural break. Digitalized tourism is strictly bound to a physical spot (on-site). Digital tourism, however, uncouples the experience from physical movement entirely. This uncoupling directly punches a hole in the UNWTO's orthodox definition of tourism, which has historically taken physical displacement for granted. Functionally, this marks a hard transition from "technology-assisted tourism" (where data flows optimize the physical supply chain) to "technology-mediated tourism" (where the infrastructure is entirely virtual).

Far from being a game of academic semantics, getting this boundary right is a matter of survival for empirical research. As cross-tabulated in Table 1, treating these two distinct phenomena as a homogenous lump trigger an immediate methodological crisis. For anyone trying to build quantitative or econometric models, this conceptual fog guarantees messy variable measurements, severe endogeneity, and ultimately, flawed causal inferences. Drawing this sharp border is the only way to give researchers a clean, rigorous baseline to measure how digital transformation actually shifts tourism quality.

Table 1 Conceptual Distinction between Digitalized and Digital Tourism

Dimension	Digitalized Tourism	Digital Tourism
Nature of experience*	Physical travel enhanced by digital technologies	Experience delivered exclusively through digital environments
Role of technology	Supporting tool / Instrumental enabler	Core medium / Ontological destination
Requirement of physical travel	Strictly required	Not required (Spatiotemporal decoupling)
Spatial characteristics	On-site (Location-dependent)	Remote (Location-independent***)
Function of digitalisation	Improves processes, service delivery & information flow	Replaces or simulates physical travel experiences
User engagement	Phygital (Physical + digital integration)	Fully digital / Telepresence
Policy implications	Focus on infrastructure, smart management, and service optimisation	Focus on digital accessibility, technological innovation, and alternative tourism forms

Clarifying this boundary leaves a tangible impact across three distinct frontlines. At the theoretical level, it reins in the problem of conceptual stretching, ensuring that future scholarship builds on a stable, cumulative foundation rather than moving sand. This conceptual precision directly rescues empirical work; it gives researchers a clear guide to select highly accurate proxies and operationalize variables without muddying their datasets. Finally, on the ground, this distinction serves as a practical roadmap for destination management organizations (DMOs). Instead of drafting blanket policies that treat virtual and physically-augmented tourism as the same beast, DMOs can tailor strategies that respect the vastly different resource infrastructure each form demands.

4. Conceptual Framework: Mechanisms Linking Digitalisation and Tourism Quality

Building rigidly on the established conceptual distinction, this study develops a nomological framework to elucidate how digitalisation precisely influences tourism quality. Rather than assuming a naive, deterministic, or direct linear relationship

between technological adoption and positive outcomes, this study argues that the impact of digitalisation is mediated by a set of complex, underlying socio-technical processes.

Drawing on systems theory, three key mediating mechanisms are identified: information efficiency, innovation and value chain upgrading, and governance optimisation.

4.1 Information Efficiency

Digitalisation fundamentally resolves market frictions by enhancing information efficiency within tourism systems. Viewed through the lens of Information Asymmetry Theory [11], traditional tourism markets are plagued by pre-purchase uncertainty. Tourism products are highly intangible "experience goods," meaning tourists have limited capacity to evaluate quality prior to consumption, while firms struggle to accurately gauge heterogeneous consumer demand.

The proliferation of digital platforms, User-Generated Content (UGC), and data-driven technologies has exponentially reduced both search costs and information asymmetry. On the demand side, tourists leverage online reviews, peer-to-peer ratings, and real-time pricing algorithms as "signals" of quality, enabling highly informed, risk-averse decision-making. On the supply side, firms employ big data analytics to harvest digital footprints, allowing them to decipher latent consumer preferences and execute precision marketing.

Consequently, improved information efficiency orchestrates a more optimal matching of supply and demand. This reduction in transaction costs and enhancement in market transparency forms the absolute baseline for elevating holistic tourism quality.

4.2 Innovation and Value Chain Upgrading

Going deeper, digitalization acts as the trigger for a Schumpeterian shake-up, restructuring the tourism value chain from the bottom up. By deploying advanced ICTs, operators can finally break away from the low-margin trap of standardized mass-tourism, replacing cookie-cutter itineraries with high-yield, deeply customized services.

When viewed through the lens of Service-Dominant (S-D) Logic [12], this transformation does something radical: it dismantles the old linear pipeline of production. Instead of a factory-belt sequence, technology creates a web of networked value co-creation. Here, digital platforms double as boundary-blurring ecosystems. They forge an immediate connective tissue among players who were historically cut off from each other—forcing hoteliers, transport operators, local artisans, and the tourists themselves into a shared, collaborative loop.

This structural upgrade is accelerated as tools like AI and cloud computing turn product design into a predictive science, while blockchain strips out predatory intermediaries to secure direct transactions. The final outcome is deep, cross-sectoral convergence. Digitalization doesn't merely blend tourism with the creative, cultural, and tech sectors; it fuses them. In doing so, it accomplishes far more than a simple expansion of operational capacity—it fundamentally rewires the industry's ability to capture value, pushing the entire ecosystem away from race-to-the-bottom pricing and toward a

premium, high-quality development track.

4.3 Governance Optimisation

Finally, digitalization drives a hard pivot from passive administration to smart governance optimization. Traditional destination management is notoriously slow, relying on historical, looking-in-the-rearview-mirror data and fragmented bureaucratic silos—a structural handicap that fails miserably when handling volatile, high-density tourist spikes.

Digital interventions, spearheaded by IoT sensors, live dashboards, and digital twins, replace this retrospective guesswork with predictive, adaptive governance. Instead of reacting to a crisis after it unfolds, destination managers can deploy real-time crowding algorithms to gauge exact spatial carrying capacities on the fly. This infrastructure allows operators to use tactical dynamic pricing and proactive routing, dispersing crowds before the structural choking point of overtourism is ever reached.

This governance shift cuts even deeper by leveraging cloud platforms to tear down the institutional walls that long isolated public and private stakeholders. By forcing these fragmented actors into a unified network governance loop, destinations can operationalize synchronized early-warning systems for crowd disasters, environmental degradation, and immediate emergency response. Ultimately, this structural optimization ensures that scaling up visitor numbers no longer causes ecological and social collapse, anchoring tourism growth in a resilient, community-centered quality framework.

4.4 Integrated Mechanism and Theoretical Implications

In short, these three mechanisms are not isolated; they form a tightly locked feedback loop. Enhanced information efficiency makes the market transparent, which immediately lowers risks and sparks innovation. This innovation then generates waves of new data, forcing governance to upgrade from passive management to predictive optimization. Once this smart governance takes root, it builds the institutional trust needed to encourage further tech investment and data sharing, keeping the wheel turning.

Crucially, digitalized tourism and digital tourism trigger this same loop through completely opposite pathways. Digitalized tourism plays out entirely inside physical spaces—using tools like IoT to master crowd control and smooth out real-world operations. Digital tourism, however, breaks away from physical sites altogether, feeding the loop by building virtual value chains out of nothing, like metaverse assets. Mixing these two distinct trajectories under a single label ruins our empirical measurements. Unpacking their separate paths is the only way forward for a rigorous research agenda.

5. Implications for Sustainable Tourism

The framework developed here moves beyond the utopian hype of "tech-solutionism," offering a realistic look at the "Twin Transition" (green and digital transformation) currently pushed by global frameworks like the European Union. While technology provides powerful levers for the triple bottom line, these sustainability

outcomes do not happen automatically; they depend entirely on how they are regulated.

5.1 The Triple Bottom Line: Promises and Paradoxes

Economically, digitalization slashes micro-level waste and boosts macro competitiveness. By utilizing platform economies, small-scale enterprises (SMEs) and rural communities can bypass traditional tour operators, plugging directly into global travel demand.

Ecologically, tools like IoT and satellite imagery allow destination managers to monitor environmental footprints in real time and route traffic away from fragile zones. However, we must confront the Jevons Paradox (the Rebound Effect): making travel more efficient lowers costs, which can trigger massive surges in aggregate travel demand, ultimately driving up total carbon emissions. Furthermore, the massive electricity required to run AI servers, blockchain networks, and VR data centers introduces a heavy, hidden carbon footprint that the literature often ignores.

Socially, digital tourism (like VR/AR platforms) democratizes exploration, extending the "right to travel" to people restricted by physical disabilities or economic barriers. Yet, this push creates a sharp digital divide, marginalizing elderly travelers and underfunded micro-businesses.

This means the tech-sustainability nexus is inherently paradoxical. Algorithms can optimize governance, but they also bring algorithmic bias and lock in the monopoly of global OTA oligopolies that squeeze local hoteliers. Hyper-visibility on social media platforms easily backfires, turning quiet spots into overcrowded Instagram hotspots overnight. Tech is never neutral; its success hinges entirely on the political frameworks controlling it.

5.2 Actionable Policy: Lessons from Smart Capitals

Real-world data from European Smart Tourism Capitals—like Málaga and Gothenburg—prove that digital and green transitions must be hardwired together. These cities do not use big data to blindly maximize tourist footfall; they use it as a defensive shield to protect local environmental thresholds and resident quality of life.

Moving forward, future policies must prioritize Data Sovereignty over unchecked platform growth. Crucially, regulators must recognize that managing a physical smart-city sensor network (digitalized tourism) requires a completely different legal and ethical playbook than regulating digital assets and user interactions inside a virtual Metaverse (digital tourism). Treating these two domains as the same beast leads to regulatory failure. Only by maintaining this clear conceptual boundary can policymakers ensure that technological adoption drives genuine, high-quality tourism development.

6. Discussion

Rather than merely domesticating existing literature, the findings of this study stage a deliberate theoretical intervention into the discourse on technological transformation by shattering the conceptual blurring between digital tourism and digitalized tourism, and systematically binding this distinction to a mechanism-based architecture. This section deconstructs the structural implications of these conceptual maneuvers, situates

them within ongoing intellectual debates, and interrogates the inherent boundary conditions of our framework.

First, this study punctures the conceptual inertia that has long plagued tourism scholarship by executing a surgical separation between two distinct paradigms. Existing studies frequently rely on "digital tourism" as an overstretched catch-all term, blending technology-enhanced physical journeys with purely digitally mediated alter-realities. By decoupling digitalized tourism from digital tourism, this paper moves far beyond mere semantic policing; instead, it exposes the epistemological divide between digital technology acting as an empirical support system versus technology functioning as the ontological medium of the experience itself. This non-overlapping taxonomy rescues future research from structural empirical blindness.

Second, we advance the field by substituting the prevailing, static outcome-oriented bias with a highly dynamic, mechanism-driven diagnosis. While prior literature remains heavily obsessed with the aggregated consequences of digital adoption, the precise systemic pathways through which these transformations crystallize have remained dangerously opaque. By operationalizing this transformation through the triad of information efficiency, value chain restructuring, and governance optimization, this study builds a robust explanatory bridge between superficial description and structural causality. This shift forces the academic gaze away from whether digitalization matters, steering it toward how it actively mutates the anatomy of tourism ecosystems.

Third, our analysis serves as an epistemological antidote to the techno-utopian romanticism that dominates sustainable tourism literature. We demonstrate that digitalization is never an automated escalator to sustainability; rather, its structural socio-environmental footprints are aggressively conditional. If left unmitigated by localized governance, digital acceleration risks operating as a catalyst for overtourism and spatial gentrification.

Crucially, this tension between digital rewards and systemic disruption varies fundamentally across shifting geopolitical landscapes, a reality that delineates the primary institutional limitation of this study. Being primarily conceptualized within a European matrix, our framework is inevitably reflective of the continent's aggressive "twin transition" mandates, where destinations are coerced into embracing digital tourism to curb physical ecological footprints and enhance long-term resilience. However, transferring this logic directly to East or Southeast Asian contexts—where overriding macroeconomic priorities demand the aggressive exploitation of mass market volumes and immediate economic returns—reveals an intellectual mismatch. In those regions, the state apparatus naturally prioritizes digitalized tourism to extract transactional utility and scale supply-chain efficiency. This absence of cross-regional empirical testing remains a valid constraint. Consequently, future empirical scholarship must leverage this comparative framework to examine how highly divergent institutional settings, cultural vectors, and varying degrees of technological maturity shape these digital mechanisms.

Overall, the analytical precision of tourism scholarship hinges on rigid conceptual hygiene and structural mechanism-based thinking. Future investigations must abandon generic formulas, utilizing these cross-regional entry points to construct more localized, empirically anchored insights.

7. Conclusion

This study deliberately moves away from the conceptual inertia in tourism scholarship by drawing a decisive analytical line between digital tourism and digitalized tourism, thereby unpacking the operational mechanisms that dictate how technology actually shapes destination quality. Our core findings strip away the long-standing semantic blurring in existing literature: these two terms represent fundamentally disparate paradigms in terms of structural technological depth and the ontological nature of consumer experiences.

By defining digitalized tourism as the pragmatic integration of digital tools into physically anchored, traditional itineraries, and erasing the fog around digital tourism as a standalone experiential domain generated purely within digital ecosystems, this paper arms future empirical research with a more rigorous, non-overlapping conceptual toolkit. Furthermore, rather than treating technological impacts as a direct "black box," our framework operationalizes this transition through three mechanism-driven vectors: information efficiency, value chain upgrading, and governance optimization.

Crucially, our framework asserts that this technological trajectory is far from a one-size-fits-all formula; instead, it is highly sensitive to regional geopolitical agendas and market imperatives. In the European context, where policy design is aggressively dictated by the "twin transition" of digitalization and green sustainability, destinations are naturally incentivized to pivot toward digital tourism to mitigate the socio-environmental footprints of overtourism. Conversely, in East and Southeast Asia, where the overriding state priorities center on maximizing management efficiency, scaling economic output, and capturing mass market shares, the strategic weight inevitably falls on digitalized tourism to extract immediate transactional and supply-chain rewards.

Pragmatically, these revelations rescue destination governance from techno-utopian myths. Digitalization is not an automated guarantee of sustainability; without contextual regulation, it risks exacerbating destination gentrification and spatial inequalities. Moving forward, the scholarly agenda must abandon generic formulas. Future research should leverage the cross-regional nuances proposed in this study to interrogate how varying institutional matrixes and cultural settings yield highly divergent digital outcomes.

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