Business and Society Review

WILEY | DUQUESNE UNIVERSITY Palumbo-Donahue School of Business

ORIGINAL ARTICLE OPEN ACCESS

Paradox of Value Loops in Dynamic Markets: From Value Post-(Un)capture to Sustainable Recapture

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Received: 8 June 2025 | **Revised:** 31 October 2025 | **Accepted:** 21 April 2026

Keywords: overtourism | seasonality | sustainability paradox | undertourism | value (un)capture | value loop | value recapture paradox

ABSTRACT

The growing emphasis on sustainability necessitates a re-evaluation of traditional value creation and capture challenges, highlighting the intricate interrelation between value (un)captured and recaptured. This study investigates the dynamics of overtourism and undertourism in the sustainable development of regions. This prominent incidence of oversupply and undersupply underscores the tension between short-term economic benefits and long-term sustainable value capture. Introducing the conceptual framework of value loops and a robust value cascade, this study explores how vendors generate, lose, and reclaim economic, social, and environmental value and how other value stakeholders perceive it. Focusing on overtourism and undertourism as an exemplary manifestation of sustainable value paradoxes, the study examines the cyclical processes of value creation, (un)capture, and recapture. These paradoxes illuminate the compromises inherent in sustainability ambiguities, such as balancing economic growth with cultural heritage conservation. The study identifies trailblazing actionable approaches for reclaiming previously uncaptured value, emphasizing the roles of heritage-based, sustainable practices, stakeholder collaboration, and digital innovation.

1 | Introduction

The pressing emphasis on sustainability compels businesses to reconsider traditional value creation and value capture (VC) approaches (Kabalska and Wagner 2024). Traditionally, the perspective on VC and value uncaptured (VU) is limited by the fixed-pie assumption (e.g., Schwartz 2024). Scholarly perspectives have recently evolved to focus on the vital interaction between VU and value recaptured (VR)—two interconnected elements forming a dynamic value loop (VL) that determines how vendors generate, lose, and reclaim economic, social, and environmental benefits and how other value stakeholders perceive it. The present research broadens the traditional perspective of circularity (Zucchella and Previtali 2019)—as a regenerative system of materials, energies, and emissions—by complementing the circularity of value in a VL. It delves into this complex relationship, using oversupply and undersupply as focal points, epitomizing the ambiguities between short-term financial gains and long-term sustainability, which Nobre (2025) describes as conflicting poles.

The dynamics of VU and VR are especially applicable in the context of oversupply and undersupply in dynamic, seasonal markets with substantial fluctuations. In the context of tourism, businesses and local communities struggle to fully capitalize on the advantages of tourism due to inefficiencies, resource depletion, and inequitable stakeholder engagements (Guimarães-Costa et al. 2025). This missed value signals a wasted opportunity and paves the way for recapturing the sustainable value (SV). By embracing cutting-edge blueprints such as circular economy

Abbreviations: SRP, sustainable value recapture paradox; SUP, sustainable value uncapture paradox; SV, sustainable value; VC, value capture; VL, value loop; VR, value recapture; VU, value uncapture.

practices, fostering stakeholder collaboration, and leveraging digital technologies (Chaturvedi et al. 2025), vendors can recover lost value, bolster resilience, and advance long-term cultural heritage conservation (del Vecchio et al. 2022).

This study investigates the VLs intrinsic to the tourism sector, underlining their cyclical characteristics and the prospects they offer for VR. A VL illustrates the continuous flow of VC, VU, and VR among stakeholders, revealing the intricate connections within a business ecosystem. In addressing oversupply and undersupply, VLs aid destinations in shifting from short-term exploitation to SV reallocation, striking a balance between economic growth and environmental stewardship. In this vein, the phenomenon of overtourism and undertourism (Dodds and Butler 2019; Mihalic 2020) is an illustration of value dynamics.

At the core of this exploration are the SV paradoxes, the study's fundamental conceptual tool, which highlights the delicate balancing act of economic, social, and environmental aspirations. These paradoxes underscore the inherent tensions and ambiguities in pursuing sustainability, where the challenge lies in harmonizing competing priorities to create, (un)capture, and recapture value. For instance, the sustainable value uncapture paradox (SUP) emerges when attempts to enhance one sustainability aspect inadvertently jeopardize another. In contrast, the sustainable value recapture paradox (SRP) reflects the trade-offs in salvaging lost or squandered value. Such paradoxes are particularly visible in tourism, where efforts to mitigate overtourism (undersupply) often result in undertourism (oversupply), creating ongoing challenges for destinations.

The concepts of overtourism, undertourism, and carrying capacity are widely covered in contemporary tourism research; however, their definitions remain contested (Pai et al. 2024). Overtourism is not only physical congestion but also a socially constructed perception fueled by tensions between host communities, visitors, and governance structures (Bouchon and Rauscher 2019; Koens et al. 2018). Ultimately, overtourism is less a precise analytical concept than a discursive label for the resulting social, cultural, and environmental pressures (Milano et al. 2024). Similarly, undertourism is not merely the absence of visitors, but a condition shaped by structural imbalances in demand, seasonality, and tourism flows, rendering destinations socioeconomically vulnerable (Barač–Miftarević 2023; Blázquez-Salom et al. 2023). Finally, carrying capacity—a quantifiable threshold for visitor numbers—has been critiqued as reductionist because it neglects the variability of visitor perceptions, host tolerance, and contextual governance arrangements (Bertocchi et al. 2020; Long et al. 2022). Contemporary scholarship increasingly stresses that these notions are dynamic, relational, and socially negotiated, not fixed or universal categories (Milano et al. 2024). These debates highlight their conceptual complexity and underscore the importance of situating our analysis within this broader, contested scholarly conversation.

By articulating the significant interrelation of VU and VR through sustainable VLs, this paper addresses a prominent question surrounding the management of seasonality: *How can businesses and communities meaningfully reclaim lost value without intensifying oversupply and undersupply?* To address this question, this research connects the theoretical frameworks of value dynamics with illustrative insights from a tourism ecosystem. This comprehensive approach illuminates how value is preserved, reclaimed, and recaptured, ultimately fostering long-term sustainability. The study enhances the scholarly understanding of the complex value paradoxes influencing oversupply and undersupply while providing actionable strategies for stakeholders eager to navigate these pressing challenges and contributing novel value frameworks, such as the value cascade, built upon concepts like VR and VLs.

Instead of modeling tourist outflows, our paper emphasizes overtourism and secondary undertourism as aspects of value (un)capture and (re)capture. These phenomena exemplify value logics that should be perceived beyond their conventional scope as challenges in tourism research and management. In fact, the conceptual advancements are relevant to all businesses affected by substantial seasonality—notably services like outdoor sports and fitness or retail, but also physical goods like cars, school supplies, or food items. Since services cannot be produced in advance and stored, the results herein are presented from a service industry perspective.

Section 2 of the paper introduces the core concepts underpinning the study, including VLs, the value cascade framework, and the *processes* of VU and VR. It establishes the theoretical grounding for analyzing SV flows and highlights the paradoxical tensions between capturing, uncapturing, and recapturing value. Section 3 examines overtourism as a practical manifestation of the paradoxical tensions in SV recapture. Section 4 details the study's methodology. Section 5 presents its findings. Section 6 synthesizes these findings to propose blueprints for closing VLs and addressing SV paradoxes. Section 7 discusses its broader significance. Section 8 addresses the study's limitations and suggests further research areas.

2 | Exploring Theoretical Foundations: Value (Un) capture and the Dynamics of VLs

2.1 | The Interplay of Sustainable Value (Un) capture: Insights Into Sustainable VLs

SV becomes crucial in an interlinked modern economy facing limited resources, balancing economic growth, environmental protection, and social fairness. By incorporating sustainability into value creation logics and processes, businesses can improve their market survival abilities and contribute to larger social objectives (Baldassarre et al. 2017).

VC refers to the strategies a company uses to secure a portion of the value generated during a market transaction, typically in terms of profits or competitive advantages (Bowman and Ambrosini 2000). In contrast, VU occurs when businesses cannot fully convert their generated value into economic returns. This stems from external factors, such as the inability to establish a process of monetizing clear-out aspects of the value they provide, competitive pressures, or market saturation (Yang et al. 2017). This VU becomes evident when customers or competitors benefit from a company's offer without reciprocal financial compensation to the firm. Recently, Wagner and Kabalska (2025) generalized this perspective to non-financial VC of

stakeholders and introduced a VU chain. However, VU is more than just a missed opportunity; it can also be strategically utilized to promote broader ecosystem benefits, potentially resulting in future sustainable VR (Chamakiotis and Petrakaki 2024).

We define sustainable VR as the *process* by which entities (vendors and stakeholders) extract or reacquire value from products, services, or innovations post-initial value creation and (un)capture. This concept is essential in sustainable business practices, which aim to extend the lifecycle of products and services through reuse, recycling, or refurbishment (Geissdoerfer et al. 2017; Yang et al. 2017). In contrast to well-established linear models, which focus on value apprehension and eventual loss, the *VR process* emphasizes closing the loop by identifying opportunities for value recovery and reintegration, notably reconsideration and reappraisal of non-financial value. Businesses recapture value by offering remanufactured products or introducing take-back programmes that retrieve resources that otherwise become wasted (Lacy and Rutqvist 2015; Stahel 2016). This approach is increasingly recognized as essential for sustainability, reducing resource depletion and minimizing harmful environmental impacts. However, the question emerges: *Who will accept "reworked" or "refurbished" value?* This includes experiences like a touristic trip that a social peer has already had.

Furthermore, technological advancements, including predictive modeling and the Internet of Things, have enhanced service-based offerings such as virtual reality-enabled remote monitoring and maintenance services (Chaturvedi et al. 2025). These services help businesses monitor and optimize product usage, extending asset longevity and supporting more sustainable, service-oriented practices (Ellen MacArthur Foundation 2023). From a service management perspective, this shift leads businesses to pivot from transactional to relational models, focusing on delivering value through product-service systems. The service-dominant logic (Vargo and Lusch 2004) further emphasizes how this approach enhances value co-creation, aligning customer and business interests toward a more sustainable and resilient business ecosystem. Ultimately, recapturing SV enhances a shift from linear models to dynamic, non-linear structures (Mele and Russo-Spena 2018), such as systems or holons, prioritizing long-term ecological balance, resource conservation, social needs, and business profitability (Bocken et al. 2016; Borchardt et al. 2024).

2.2 | Circulating Value: The Devoir of VLs

In this paper, VLs serve as a framework to examine the cyclical processes by which value is generated, (un)captured, and recaptured within an entity or broader structure, like the regional ecosystem of an industry. Such a sequence of connected value fluctuations starts and ends with the same type of stakeholder and is built of at least two links (a reciprocal or bilateral transaction between two stakeholders). These circular flows are essential for comprehending the value dynamics in digitalizing ecosystems (Evans and Basole 2016), emphasizing the significance of network effects, leading to a positive VL, where the value of a product or service increases as more people use it (Koskela-Huotari et al. 2024).

Moreover, co-creation processes, which involve users' active participation in developing products or services, further contribute to developing VLs by consistently enhancing value propositions in response to user feedback (Falkenreck and Wagner 2022; Ramaswamy and Ozcan 2018). For that reason, the flow of products from one stage to another is not the only aspect of social interactions within the loop (Palakshappa et al. 2023); disruptions in a single component of the loop have a cascading effect on the entire system (Adner 2017). The iterative nature of VLs supports businesses to adjust and further develop in response to economic, social, and environmental changes, offering an enduring, sustainable competitive advantage (Jacobides et al. 2018). Furthermore, VLs are frequently employed in open innovation ecosystems (Mele and Russo-Spena 2018) to facilitate the integration of external knowledge and support innovation by building upon automation and artificial intelligence-driven insights (Iansiti and Lakhani 2020).

Linking the VR and VL concepts, we introduce the value cascade framework, enabling the counterflow in the loop; Figure 1 illustrates a value flow from its creation to recapture in a business ecosystem. In the value cascade, the "Businesses (*value creators*)" layer involves entities creating and providing value to be conceptualized, designed, produced, and delivered. Next, in the "Service Providers (*value deliverers*)" layer, incumbents distribute value as intermediaries or enablers, transferring the value from businesses to customers. This is followed by the "Customers (*value recipients*)" layer, where customers or other benefiting stakeholders receive and capture the delivered value. The value they receive is directly tied to their capture, as it brings them tangible benefits and genuine satisfaction from the products or services they choose. Consequently, we identify the VR in the bottom layer of business (*value (un)capturers & recapturers*) in the loop. It represents how businesses recapture value—once customers (recipients) capture the value, businesses capture feedback, payments, and insights, which can then be redesigned to generate new value. This is a continuous process of capturing value and refining what is offered and which values are proposed by the offerings (Vargo and Lusch 2004).

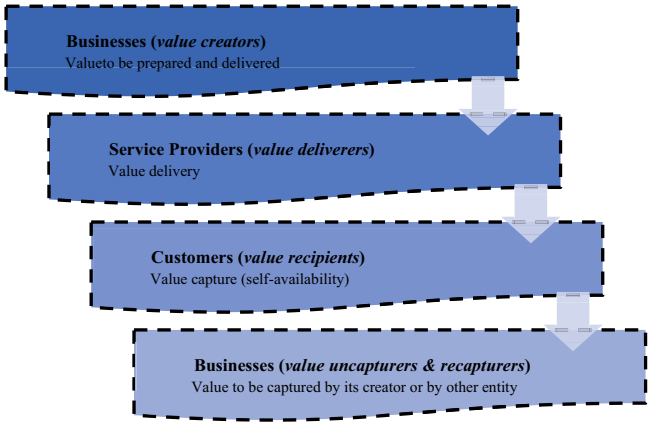

FIGURE 1 | Counterflow in value cascade enabling VL. *Source:* Authors' evaluation developed from Rodríguez-Peris and Segarra-Oña (2019).

The above structure emphasizes the dynamics and cyclical nature of value flow in a business environment, showcasing how entities deliver, enhance, and regain value throughout this structure. Considering further prospective linkages that demonstrate coherence between them allows us to depict substantial value flow accurately. Ultimately, the VL concept identifies the specific transactions contributing value to the stakeholders involved in this process (Rodríguez-Peris and Segarra-Oña 2019). However, a more comprehensive analysis of our model leads to the identification of several paradoxes in the business ecosystems.

2.3 | Sustainable Contradictions: Value (Un) capture and Recapture Paradoxes

Paradoxes are counterstatements comprising an open contradiction or positing one (Hahn and Knight 2021; Rescher 2021; Sainsbury 2009). In terms of sustainability, a paradox covers conflicting societal and economic needs for increased consumption, which disaffirms the environmental imperative to reduce it. The dilemma arises between the advantages of adopting a sustainable approach and its overlooked or omitted negative consequences.

The sustainability paradox emerges when businesses try to balance their commitment to social and environmental sustainability with the demand for financial performance (Argento et al. 2022). To achieve such a balance, vendors address temporal inconsistencies in economic, social, and environmental performance dimensions, navigate conflicts between business objectives and societal responsibility, and address divergent stakeholders' demands, as conflicting sustainability goals, perceptions, and expectations contribute to the sustainability paradox (Chamakiotis and Petrakaki 2024).

In that vein, the SUP encapsulates the coexistence of VC and VU in a value flow. Attempts to capture SV may expose or worsen conflicts between economic, social, and environmental value aspirations. This paradox emerges when rational approaches to improving one facet of SV unintentionally result in the disregard or diminishment of another, posing an intricate obstacle to attaining comprehensive and equitable sustainability contributions. Thus, intentionally uncapturing value is a paradox (Kabalska and Wagner 2024), but it is also a solution for overcoming the SV paradox (Hahn and Knight 2021). Exploring this facet is an intriguing yet under-investigated research challenge.

The second ambiguity, SRP, refers to the tension between efforts to recover undercapitalized or lost value and the unintended negative consequences that may arise during the process. This paradox highlights businesses' challenges in balancing environmental and social aims with economic viability. This paradox underscores the need for a holistic approach to sustainability that considers the benefits and trade-offs of VR practices (Esposito et al. 2018). Several discrepancies (Table 1) emerge within sustainable VR, reflecting inherent tensions between economic, environmental, and social objectives.

The identified paradoxes underscore the complexity of balancing sustainability and social needs with business objectives to pursue circularity and resource efficiency. VR is recognized in various sectors, including tourism (del Vecchio et al. 2022), where destinations like Amsterdam implement visitor caps and sustainable policies to restore local balance. Considering this, we draw attention to the paradox resulting from over-restriction or over-limitation, which we define as the paradox of the value limitation loop (Figure 2). Substantial restrictions, which are a consequence of the first shortage, lead to a secondary shortage, which in turn forces another cycle of intensive value over-creation.

Table A1 summarizes the key concepts of this study, highlighting their distinctive features and relationships. It specifically clarifies fundamental concepts such as the value limitation loop and the value cascade, which represent opposite dynamics of systemic value creation and constraint. By situating these concepts in relation to each other, we offer readers a conceptual map that anchors our subsequent analysis and facilitates engagement with the complex interplay between VU, VR, and paradoxical sustainability.

3 | Overtourism as an SRP

Overtourism, or excessive tourist inflow in specific locations, presents a pivotal challenge for businesses and society (Page and Duignan 2023). While tourism catalyzes substantial economic growth, driving job creation, infrastructure enhancements, and cultural exchanges, it also heavily burdens natural resources, disrupts local communities, and jeopardizes a destination's cultural and environmental fabric. This duality creates a profound value paradox (Hahn and Knight 2021): tourism generates considerable wealth while simultaneously depleting the very resources that underpin that benefit (Higgins-Desbiolles et al. 2019). Overtourism occurs when the number of visitors overwhelms a destination, resulting in a palpable decline in the quality of life for residents and the overall touristic experience (Dodds and Butler 2019). This leads to the overexploitation of natural resources, the degradation of cultural heritage, and negative socio-economic consequences for the host communities (Mihalic 2020).

Overtourism is a notable business paradox in which attracting a high volume of tourists harms the long-term viability of a distinct destination (Page and Duignan 2023). While intensified tourism brings economic advantages, it frequently leads to negative consequences such as environmental harm, congestion, and loss of cultural authenticity (Goodwin 2017), paradoxically reducing the tourist appeal of the given location. This phenomenon arises from a conflict between the pursuit of immediate financial gains and the necessity to implement sustainable destination management that safeguards the local environment and community welfare in the long run (Dodds and Butler 2019).

Although tourism expansion is crucial in fostering economic progress, it may also adversely affect the environment and local communities (Peeters et al. 2018), creating a VL where their presence gradually diminishes the attractions that captivate tourists. This contradiction presents a dilemma for local businesses and governments as they strive to strike a harmonious equilibrium between boosting tourism, guaranteeing its long-term viability, and preserving cultural heritage. This issue has been addressed

TABLE 1 | Typology of sustainable VR paradoxes illustrated by selected cases.

Name of the paradox	Nature of the paradox	Exemplary reference
Economic growth vs. resource conservation	On the one hand, businesses aim to generate continuous profit through re-manufacturing, reusing, and recycling. On the other hand, sustainable practices limit production and consumption to minimize environmental impacts, challenging the notion of continuous and limitless growth.	Geissdoerfer et al. (2017)
Product longevity vs. product innovation	While extending product lifecycles through repair and reuse is essential to VR, this creates tension with technological innovation, often leading to shorter product life cycles to meet consumer demand.	Stahel (2016)
Circularity vs. system complexity	Circular economy practices aim to close resource loops and reduce waste yet doing so often adds complexity in logistics and operations, such as managing reverse logistics and ensuring the quality of remanufactured goods. This can lead to increased operational costs, potentially offsetting some environmental gains.	Bocken et al. (2016)
Sustainability intensification vs. profit maximization	VR seeks to align environmental benefits with business profitability, but sustainable practices—such as product take-back programs or advanced tracking systems—require significant upfront investments. This creates a paradox where long-term sustainability goals might conflict with short-term profit maximization strategies.	Lacy and Rutqvist (2015)
Implementation (un)sustainability	To invest in sustainability transformations, resources must first be generated through economic activities. Consequently, achieving more sustainable investments often necessitates prior economic growth to accumulate the required resources, even if this growth may rely on practices that are not entirely sustainable.	Kabalska and Wagner (2024)
Technology efficiency vs. environmental impact	Technologies such as the Internet of Things and blockchain can enhance the efficiency of VR processes through improved monitoring and data analysis. However, these technologies require energy and resources, potentially introducing new environmental impacts that hamper reaching sustainability objectives.	Ellen MacArthur Foundation (2023)

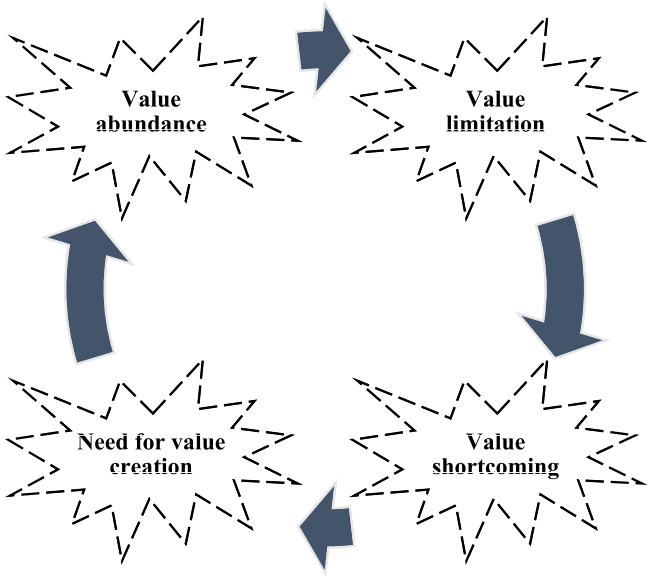

FIGURE 2 | Value limitation loop paradox framework.

previously by quantitative modeling and applying optimal control theory (Bednar-Friedl et al. 2012; Pásková et al. 2021) to assess the tourism carrying capacity of a tourism destination. The results contribute to decision-making over measures to reduce overtourism but do not explain the underlying reasons for temporal and spatial patterns of tourist inflow and tourism vendors' value proposition processes.

Building upon our value limitation loop paradox, we acknowledge the threat of secondary undertourism arising from excessive efforts to prevent overtourism. We define secondary undertourism as a result of excessively limiting tourist traffic through measures like banning vehicles in the city center, intentionally limiting hotel capacity or increasing their prices in a given area, and imposing additional tourist taxes. This leads to a reduced visitor influx at a particular touristic destination in line with degrowth principles (Higgins-Desbiolles et al. 2019).

Furthermore, in overtourism, VR refers to the blueprints of reclaiming the SV uncaptured due to the excessive concentration

of tourists in specific locations. VR approaches, such as sustainable tourism practices, local reinvestments, and a more visible digital presence, seek to mitigate the negative impacts of overtourism by restoring the balance between tourism demand and the region's carrying capacity. Effective VR calls for coordinated efforts among stakeholders to harmonize economic growth with resource conservation and community well-being. We argue that VC and VR are interrelated processes in the context of overtourism and secondary undertourism. Thus, they are not limited just to an "original" value creator; instead, any (local) entity that recognizes the VU and can do so recaptures a fraction of this value.

3.1 | Macerata as a Value (Un)capture and Recapture Tourism Destination

Macerata, a historic city in the central Italian province of Marche, is known for its well-preserved medieval architecture and rich cultural legacy. The Sferisterio, an open-air opera house that holds the famed Macerata Opera Festival every summer, is the city's best-known attraction. As a university town, Macerata holds a significant intellectual presence in the humanities, which adds to its cultural potential. The city has various other landmarks, including the Palazzo Buonaccorsi, notable for its art collections and ancient carriages, and the Church of St. Francis, representing the city's rich ecclesiastical heritage.

The Marche region, encompassing a diversified terrain ranging from the Adriatic Sea to the Apennine Mountains, is peppered with hilltop villages, vineyards, and beaches. However, it is underexplored compared to neighboring regions like Tuscany and Umbria. Tourists' interest is mostly related to the sea, leaving the backlands unnoticed. Although the area is well-known for its agricultural heritage, notably wine, olive oil production, and artisanal craftsmanship (Camera di Commercio Delle Marche 2021), its gross income is primarily from industrial sectors, including fashion and footwear, technology, and pharmaceuticals (Regione Marche 2024; Statistica Regione Marche 2025).

With natural parks like Monti Sibillini and lesser-known cultural treasures, the Marche area, however, offers a distinct combination of nature, history, and culture, forming an emerging destination for people looking for real, non-mass tourist experiences. The Marche's natural legacy is a vital resource that adds value to regional tourism (Lorenzini et al. 2011), despite the severe damage a 2016 earthquake caused to the architectural heritage in most historical centers situated in the province's hilltop towns (see Figure A1).

Destinations with VU provided by rural and cultural assets, like the Marche region, have substantial potential for long-term tourist growth (see Figure A2) if adequately marketed (Raab et al. 2023). Furthermore, balancing local growth and cultural preservation is critical for the long-term economic survival of tourism destinations like Macerata. We also perceive Macerata and the Marche region as manifestations of SV paradoxes and a ground for the existence of sustainable VLs; there is both overtourism and undertourism, and local businesses are struggling with VU yet can easily recognize new avenues of VR.

Secondary undertourism is the paradoxical outcome where mitigating overtourism in one destination inadvertently creates insufficient demand in another, resulting in an imbalance in local VLs. This notion builds on broader discussions of seasonality and uneven tourism flows, as seen even in established destinations like Majorca (Blázquez-Salom et al. 2023). These discussions highlight that measures that address congestion in popular tourist sites may create unintended economic and social costs, both locally and elsewhere (see Figure A3). For example, the Polish ski resort Białka Tatrzańska experiences undertourism outside of the winter season (Żemła and Szromek 2023), and European health resorts (heavily dependent on stable inflows) face sharp downturns when tourist and patient traffic shifts to other destinations (Szromek 2021). In this sense, tourism paradoxes are not confined to Macerata but reflect a broader systemic value dynamic in which efforts to alleviate overtourism (undersupply) often produce secondary undertourism (oversupply).

Provincial statistics for Macerata indicated a significant seasonal trend during the June–August 2024 period (see Figure A4), with 884,000 overnight stays, a figure slightly higher than the combined total for the remaining 9 months (689,513) (Italian National Statistics Institute Nazionale di Statistica 2025). This peak is largely driven by coastal municipalities such as Recanati, which reports an extreme fluctuation from 2671 overnight stays in January to 112,685 in August. In contrast, the city of Macerata itself does not experience such drastic peaks; its monthly overnight stays range from 14,794 in January to 28,115 in December, with summer values averaging around 20,654. This indicates that the city is indirectly affected by overtourism in its regional ecosystem, as the high influx of visitors to nearby hotspots influences accessibility, infrastructure, and visitor flows. Consequently, Macerata experiences secondary undertourism pressures. This makes the city a paradoxical yet intriguing value dynamics case where overtourism (undersupply) and undertourism (oversupply) are interlinked through complex regional VLs rather than concentrated solely within the city's walls.

To substantiate the challenge of secondary undertourism in Macerata, we examine the recent business dynamics in the local hospitality sector. The hotel and restaurant industry saw a stark contrast between 2022 and 2024, with 114 new businesses opening while 507 shut down (Chamber of Commerce 2025). In 2024 alone, only 36 new establishments entered the local market while 151 closed (Chamber of Commerce 2025). These figures indicate that local businesses are struggling to sustain their operations, suggesting that tourist inflows have been insufficient to maintain the viability of many actors in the sector. This imbalance is captured by the concept of secondary undertourism, which we propose instead of implying a complete dependence on tourism. While overtourism pressures are often associated with neighboring hotspots, Macerata simultaneously experiences undercuts of thresholds of insufficient demand that undermine the resilience of its local economy.

4 | Research Method and Data Collection Process

Given the exploratory nature of the research and practical constraints in data access (Rahi 2017), a convenience sample of vendors and other stakeholders was utilized (Marshall 1996). The

objective was to obtain rich, diverse accounts that captured key dynamics, focusing on data parsimony over large-scale representativeness. Demographic data were collected to contextualize participant perspectives based on their roles and backgrounds.

Data analysis was conducted using the Gioia et al. (2013) methodology, which allowed for a systematic transition from informant (local ethnographers)-centric first-order concepts to researcher-centric second-order themes and third-order aggregate dimensions. The coding was executed in two phases. For interviews with vendors, students performed the initial coding, which was then refined by the researcher (second round) to ensure consistency and enhance interpretative rigor. For all other stakeholders, coding was conducted exclusively by the researcher(s). All coding was managed using MAXQDA software to facilitate organization, comparison, and refinement of the emergent categories.

The first batch of the research material was collected during a scholarly project conducted at University X (censored for the review process) in May 2024 among undergraduate students (majoring in business and international marketing). One of the components of the project was in-depth interviews with small provincial vendors, which focused on various aspects of VU and VR. A total of 22 comprehensive interviews (lasting 40 min to 2 h) were conducted (anonymized and marked R1 to R22) and coded using our framework (Table 2). Students received training in a qualitative research methodology and were encouraged to engage as local ethnographers by collecting personal narratives and visual documentation to enhance the fieldwork. The collected data was translated from Italian to English.

From September to October 2025, the researchers conducted the second round of interviews—precisely 10 interviews lasting 40–90 min each. This stage focused on various stakeholders representing the remaining instances in the value cascade: value deliverers (e.g., local tour guides LG1 and LG2) and value recipients (e.g., students L1 [born and raised in the Marche region], academics E1 and E2 [from the local university and born and raised in the region], locals L1–L4, religious activists A1, and Macerata tourists T1 and T2). The interviews focused on various aspects of VU and VR, were conducted in either English or Italian (and translated to English), and coded using the same framework (see Table 2). The coding framework covered key topic areas related to VLs: (1) indicators of overtourism and secondary undertourism, (2) sustainability paradoxes, (3) sustainable VU, and (4) sustainable VR.

This research design enabled us to understand the complexity of VU and VR logics from the VL perspective. Moreover, investigating the pressing issues of overtourism and secondary undertourism facilitates delving into the nuances of the value limitation

TABLE 2 | The coding framework.

Node	Description	Codes	
(1) Indications of overtourism/ secondary undertourism *Location, tourist volume, and identified impacts.*	Instances where tourist numbers exceed a destination's environmental, social, or infrastructural capacity (e.g., crowding, resource depletion).	(1a) Stakeholders	Identifying key players (local communities, governments, tourists, businesses) affected by or contributing to overtourism.
		(1b) Management strategies	Policies or actions aimed at mitigating overtourism (e.g., visitor caps, zoning, pricing strategies) (Nieuwland et al. 2025).
(2) Sustainability paradoxes *Instances of conflicting sustainability goals, contradictions, and trade-offs.*	Situations where actions taken to promote sustainability generate conflicting or unintended, unsustainable outcomes.	(2a) Economic dilemmas	E.g., conducting profitable business.
		(2b) Social dilemmas	E.g., addressing societal needs.
		(2c) Environmental dilemmas	E.g., preserving the natural environment.
		(2d) Resolution attempts	Approaches taken to address these paradoxes.
(3) Sustainable VU *Lost economic, environmental, or cultural value.*	Loss or erosion of value due to unsustainable practices (e.g., environmental degradation, social or cultural loss).	(3a) Instances	Examples of VU across businesses and places.
		(3b) Consequences	Short- and long-term negative effects on the local economy, ecology, and society (del Vecchio et al. 2022).
(4) Sustainable VR *Strategies and actions aimed at reclaiming value.*	Efforts to VR through sustainable practices (e.g., recycling, reusing resources, restoring ecosystems).	(4a) Strategies	Approaches like regenerative tourism, circular practices, energy recovery, and local reinvestment.
		(4b) Measurements	Indicators of success in recapturing value (economic recovery, ecological restoration, community well-being) (Zaman and Lehmann 2013).

loop paradox. Finally, we illustrate the phenomenon discussed in the manuscript with relevant photographs in Appendix A.

5 | Research Results

Building upon the sustainability trailblazing strategy for intentional VU (Kabalska and Wagner 2024), we present our research results through the lens of a looped pathway. The strategy involves innovators (sustainability trailblazers) leaving VU to pursue long-term social and environmental aspirations, sacrificing financial gains to create value for the common good, addressing systemic challenges, and promoting sustainability. The looped pathway represents the complexity of these practices and the alternative routes entrepreneurs and business representatives take when deciding to uncapture and recapture SV.

5.1 | First Looped Pathway: From Overtourism to Secondary Undertourism Paradox

In the context of overtourism and secondary undertourism, Macerata represents a nuanced case. The city experiences a significant influx of tourists during the summer, driven mainly by opera events: "They come in the summer, mainly for the opera" (R3); thus, its cultural attractions cater to a niche audience: "I think the music is the most important attraction in Macerata, of course" (L1). This seasonal spike in tourism results in pressures typical of overtourism, particularly in specific areas, such as central locations and major event venues: "Here is a bustling area for tourists; it is just the destination where they unload tourists from the buses" (R17). However, during the off-season, Macerata's reliance on academics visiting the local university highlights the paradoxical phenomenon of secondary undertourism from the seasonal influx, where local businesses depend on non-touristic clientele to sustain themselves.

> There's a strong bond between the university and Macerata's life [...] It's a lesson session that is from February to May. I suppose the moment this ends, Macerata completely dies.
>
> (E1)

> Macerata is not a very touristy city, so even though my shop is in a central location, I work more with a fixed clientele.
>
> (R16)

Complementing this, L1 noted, "(...) especially in summer, that is the period without university, I walk in the streets of Macerata and a lot of shops are closed." A local tourist guide (TG1) corroborated this, explaining

> It depends on the local culture. I mean, locals don't take into consideration that tourism is a great, big, and important economic source. They don't understand it. I don't know why. So, for example, the shops' opening hours are incredible. Shops open at 9.30 a.m., more or less, and close at 1 p.m. They reopen at 4 p.m. and close at 8 o'clock. But visitors, especially during the summertime, walk around the city at any time, and the shops are closed. The opening hours for museums are the same. They don't respect the European standards.

This also affects other local stakeholders, who must adjust their daily lives to local customs. Macerata's public life follows a rhythm that seems tailored for quieter, secondary undertourism periods. It is barely altered to accommodate peak overtourism events, such as the opera festival week.

Managing undertourism with the under-publicized value of the Marche region has the potential to distribute tourist flows more evenly across the year: "Marche was advertised on TV, but this did not result in a greater influx of tourists" (R1). This is confirmed by another stakeholder (E1):

> (...) we usually get the information about some cultural events through our email. So, the moment our exam season ends and we leave Macerata, we do not see these emails for maybe some months—the summer season or maybe the holiday season in December. Quite frankly, there is a chance that those events could drop. Very less people come to Macerata; so in some way, it could affect the actual events that are in Macerata.

One respondent (R7) pointed out that the region's diversity of landscapes, ranging from sea to mountains, often goes unnoticed, resulting in missed opportunities to mitigate tourism pressures: "Marche has everything." In the same vein, T1 stated,

> We have different landscapes in a few kilometres. We have high mountains, hills, cities, and a sea. We literally have a lot of stuff in very, very little space. It's a nice place for tourists, actually.

Moreover, "hit-and-run tourism," as R9 highlighted, represents the struggles of small businesses dealing with short-stay visitors, adding to the complexity of managing tourism sustainably. There is also a lack of connections, particularly in terms of marketing ("There are rich offers in terms of events that you may find, especially during the summer (...) but they're not integrated. There are no integrated offers" [TG2]). Therefore, more harmonized tourism management, including effective promotion of lesser known attractions, could alleviate a major tourism paradox: overtourism during peak event periods and secondary undertourism during off-peak times (Figure 3). A tourist (T2) in the low season said, "Well, it definitely didn't feel very touristy." One of the experts (E2) highlighted this challenge by offering the following example:

> They did monumental origami; they were walking in a parade across the city center, which was also around Easter time. So that's experimental. And so I said, "Whoa! No more Christianity!

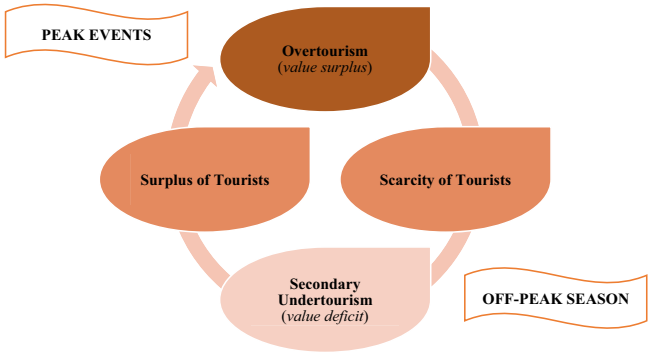

FIGURE 3 | Paradox of overtourism/undertourism loop.

> Only contemporary art! That's fantastic." This is something very unique that you might find in Macerata because of the presence of the Academy of Arts. It provides a very experimental, artistic side. But other than that, you don't really see any art or anything boldly advertising the treasures of Macerata, which is a shame.

In Macerata, managing overtourism and secondary undertourism requires a careful balance between leveraging cultural assets ("The facilities must have different services; there has to be authenticity and cohesion between the different activities" [R22]) and targeting the needs of tourists.

> The time of the opera festival, as a citizen, is something very positive for the city because it brings visibility and visitors from different countries. At the same time, as a resident, I have to admit that it sometimes creates a problem. When I have to go back to my house during the festival, there is traffic, and the roads are closed. So, as a citizen, this is difficult, but it's a price that I will pay for these kinds of things.
>
> (L1)

The reliance on historical and cultural heritage, such as the restored theater and the Church of St. Francis, attracts niche visitors who come for unique experiences beyond mass tourism. TG1 stressed "(...) that the church is very important for the locals. As for the local Eastern culture representatives, it was a place of pilgrimage in the old days."

This strategic focus supports a less seasonal form of cultural tourism, which is critical in managing the flow of visitors, ensuring a steady flow of tourists, and reflecting a customized approach to maintaining customer loyalty, leading to VR in the off-season: "There is great politeness and attention to the customer" (R1). Contrary to this, L3 stated,

> The offer of restaurants and the offer of entertainment venues have gradually gone down. I think there are a few entertainment options, especially for younger people. So yes, that's true.

Businesses' flexibility in adapting to tourist habits, such as changing restaurant hours for foreign visitors, demonstrates how local vendors can cater to diverse tourist needs to align with the local economic cycle (Figure 1) while sustaining their businesses during off-peak periods: "The business must adapt to these needs, perhaps by opening earlier and organizing itself accordingly" (R19). Additionally, the integration of local products into the culinary offer, blending traditional and gourmet styles, capitalizes on the growing interest in authentic experiences, which further supports Macerata's position as a destination for discerning tourists seeking exceptional experiences: "You go to the seaside for the sea, but you go for the history and the food and the old tradition" (T1).

5.2 | Second Looped Pathway: Sustainability Paradoxes

Respondents recognized social dilemmas that create sustainability paradoxes, particularly local entities' lack of collaboration in the local tourism ecosystem: "There is no mentality of working as a network; they all tend to do their own thing" (R5). Despite Macerata's rich cultural offer, there is a VU by means of an absence of unified promotional efforts among local stakeholders, as individual businesses and institutions operate in silos rather than leveraging collective strengths: "These events attract people but are not publicized, and one often finds out about these events the next day through the Macerata Chronicles" (R16). This fragmentation hinders the city's ability to fully capitalize on tourism opportunities, especially when events like opera performances draw in visitors who often leave without engaging further with the local economy: "Once the performance is over, they leave and do not bring work to the city, except to the bars near the Sferisterio for an aperitif" (R16) and "They come to Macerata, participate in the event, and leave; they do not stop to visit the city" (R9). The time spent by visitors in Macerata should be extended to enable VR. TG2 reflected,

> A few years after starting this job, I tried to expand my business. I was in touch with several companies that provide bus services. So just to give you a complete example of the problems we face in terms of connection, my idea was just to offer a better connection for tourists who arrive here during the summer to go to the sea or beach and stay there and an evening, sometimes night, just to connect them to the events, or to have late evening tour guides. It didn't work. Nobody wanted to invest in such an activity, and they—and I can tell you that the same happened to other colleagues—asked me to basically pay in advance for the bus and the driver.

Notably, our respondents confirmed the challenges of business profitability pressures constituting sustainability paradoxes, particularly the tension between local business survival and broader tourism development. L4's observation, "Let's hope that kind of tourism doesn't come here," illustrates the point. To recapture value, shopkeepers fund initiatives to increase visitors' face-to-face engagement in the absence of municipal

support, a reflection of the unequal investment in promoting local tourism: "The initiatives were paid for by us to increase the turnout of tourists … otherwise the municipality would not help us" (R3). When tourists explore a city on foot, they immerse themselves in its unique cultural spirit; conversely, navigating by car detracts them from this experience. Walking allows individuals to reconnect with the spirit of the city as it was originally designed and intended centuries ago. However, as TG1 pointed out,

> The historical fountains are very interesting, but it's very difficult for me to get to them with a group. I work with groups—very often senior groups. So it's very difficult to visit some specific places.

While events and exhibitions thrive, peripheral areas remain neglected, creating an imbalance in regional development. This is surprising given Macerata's resilience in recovering from the 2016 earthquake: "Macerata, I would say, is a unique example; it was touched by the threat, but it managed to reopen churches and buildings in the last 10 years" (TG2). This leads to a paradox where efforts to promote tourism are disjointed and lack comprehensive planning, causing limited returns for local businesses: "Only the inner areas are developed, while the outer areas remain abandoned" (R6). Furthermore, there is an inherent conflict between the rise of shopping centers and the survival of small, traditional vendors, which rely on local clientele: "The clientele is much more local, especially because in the summer we open late in the evening" (R9); some of the business owners do not change their opening hours, even though the region relies on tourists.

The increasing relevance of shopping centers, driven by convenience and economies of scale, poses a challenge to small businesses that aim to preserve the uniqueness of local products: "The quality of products manufactured here is far superior" (R19). This paradox exemplifies how economic growth strategies often lead to unintended consequences, such as the marginalization of small businesses that are central to the cultural and financial sustainability of the region: "The promotion or the presence of shopping centers … they are two completely different realities; the shopping center has a life of its own, the historic center has a life of its own" (R21). As L4 summarized,

> No. That's not what lets you build a future, a family, just with the guarantee of a salary. No. Professionalism is needed to open a business, whatever it may be. Therefore, I say—and then naturally closure came; the crisis effect arrived, and there was devastation of commercial activities.

Furthermore, tensions between preserving the historic center's tranquility and fostering vibrant social life pose a community dilemma, as strict noise regulations and limited nightlife reduce engagement, leading to fewer long-term advantages for businesses. Collaborative efforts, such as the successful pre-COVID bridal fair, reveal the potential of joint ventures. Yet, such examples are rare due to rivalries between businesses and a general reluctance to cooperate: "Everyone sees you as a 'rival', so it is very difficult to network" (R13). This reflects a challenge in balancing local identity preservation with the need for cohesive tourism and cultural promotion activities (Figure 4).

Paradoxically, the joint events organized by the business rivals are highlighted by one of the respondents (TG1).

> Me and my colleagues usually organize some tours in the town of Macerata—for example, every year for locals, because every year we celebrate the International Tourist Guide Day. So, we organize free tours, not only in Macerata. This is an international celebration. So, we invent some special tours talking about Macerata or other small towns around it, and we try to talk about the beauty of our region and our province.

5.3 | Disrupted VL Pathway: From Sustainable Value Uncapture to Recapture

The interviews revealed several instances of VU, particularly in how Macerata struggles to capitalize on its value creation potential despite considerable and rich cultural and geographic assets. Building on this concept, local vendors have the potential to develop and leverage sustainable practices centered around the idea of "slowing down" (Page and Duignan 2023). In this approach, business representatives request tourists to dedicate their time and subsequently offer services or experiences that symbolically return this time to them. This value proposition and the related business model inherently embody a paradox. The reflections from one of the experts (E2) pointed to an interesting dilemma—the value of Macerata is recaptured by tourists who subsequently become locals.

> I have some friends—she's Italian from Benito, and he's English; they came as tourists and then bought a house (...) He's a filmmaker; he goes back to London every 2 months for new jobs (...) We keep secrets, but some people discover them, the peace of life, and the hills. That's something people appreciate after decades of crazy London life.

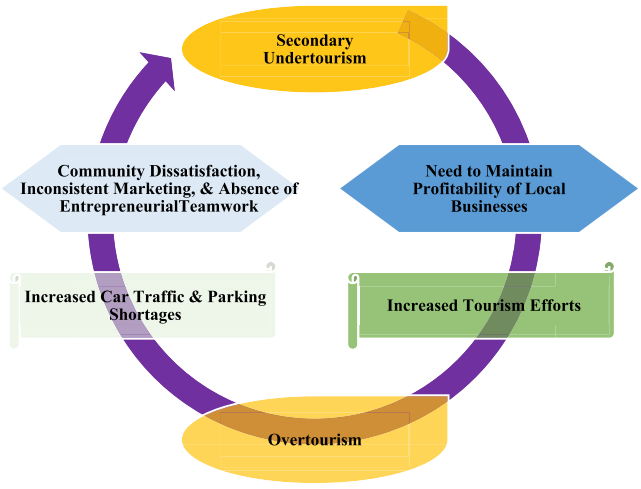

FIGURE 4 | Sustainability paradoxes loop.

Environmental impasses are tied to sustainable urban planning, particularly in harmonizing mobility and the preservation of historic spaces: "In Macerata, you do well if you feel like walking, and that's best because the fewer cars going around, the better" (R21). Complementing this, L2 highlighted that tourists fall in love with the place and subsequently become residents, seeking to recapture the local value proposition: "While everyone else was leaving, the British organized themselves, bought ruins, and renovated them to a high standard and began living there, taking citizenship." Macerata's reliance on cars creates environmental challenges, with respondents suggesting reducing parking spaces within the historic center to minimize vehicular traffic and advocating walking as a sustainable alternative. A tourist (T2) shared her impression on this: "It's such a pretty town, with all the neat brickwork, and then seeing cars in the middle of it ... it makes you feel more like another city." However, this constitutes a paradox: while promoting walking aligns with environmental goals, it clashes with the public's demand for convenient car access, particularly tourists who rely on cars.

> I think for the connection with our cities, it's a little bit complicated for me. If you compare Macerata to a city like Civitanova, there is a difference when you have to move outside, and I think Macerata could improve.
>
> (L1)

This ambiguity reflects the broader tension between fostering sustainable, pedestrian-friendly cities and accommodating modern transportation preferences while still ensuring accessibility: "We always talk about the parking problem, but there is no reason why, because there are car parks; they are a little bit outside; you just have to walk and you're there" (R21). Similarly, E2 highlighted the VU,

> (...) in the last decades, we saw monumental, fantastic squares converted to parking lots. Now, we are reclaiming them. This shift, I think, is cultural too. I mean, younger people will probably be less attached to that level of comfort of driving everywhere. Limited again to this area, which is a small city, a bit provincial, in which you use the car to do everything.

Another key issue is the failure to capitalize on the student population's potential, as the university town lacks sufficient engagement with students and young visitors ("Bars, restaurants, and other services are for the actual students who attend lessons. So the moment lessons end, Macerata essentially loses a lot of its population" [E1]), who often abandon the city for more vibrant locations ("What is deafening as an absence is our attractiveness to young people" [R21]).

Moreover, limited cooperation between local businesses and the municipality results in inconsistent promotional efforts and insufficient infrastructure investments ("The current renovations are transforming what were once abandoned flats into B&Bs" [L2]), further limiting the city's touristic appeal and economic sustainability: "There is a lack of accommodation facilities, a lack of infrastructure, and major communication arteries lead to a lack of fluent traffic, and the airport is also failing to take off" (R5).

These challenges highlight a critical gap in the city's ability to fully and sustainably capture and recapture the value of its cultural, historical, and geographical assets. E2 highlighted the low quality of the tourism infrastructure and, consequently, prospective VU by hotels.

> Families of graduating students may need a room in Macerata to attend a graduation ceremony, and the weekends may see more tourists, like from Italy—but I don't see many hotels catering to them. When I go to Umbria, hotels have amenities like spas and vineyards—perfect for a nice weekend with my partner. But I don't see such hotels in Macerata, to be honest.

In the same vein, L2 reflected,

> I still find myself turning away groups of 40 or 50 people who come to visit Macerata because they then go and sleep elsewhere, so they may eat elsewhere, so there is no hospitable space for a group to eat or sleep.

Promoting events beyond social media, such as through local newspapers, would ensure broader public awareness and increase participation, thus blending the generational gap in event attendance: "We have a local newspaper, so why not publicize it there!" (R16). Thus, aligning event programming with heterogeneous audiences, particularly younger tourists, would ensure sustainable economic growth and cultural vitality for Macerata: "We need to find new ways to experience the city. The city tells something that belongs to us all a little bit" (R18).

In conclusion, an example of voluntary VU in Macerata is the deliberate removal of cars from the city center, while non-voluntary VU is reflected in empty hotel rooms or unoccupied restaurant seats. Respondents recognized several more missed opportunities for capturing SV in Macerata, particularly in tourism, commerce, and urban development.

> So, regarding the fact that the historic center was opened and then closed to traffic, an experiment was carried out for a few years, but this led to the impoverishment of the center and the closure of many businesses. (L3)

One of the most pressing issues is the lack of reciprocal promotion of the town's cultural and commercial events, which limits the potential for economic and social VR. For instance, the absence of a unified calendar of events, inadequate accessibility to cultural sites due to inflexible opening hours, and insufficient public transportation all undermine the potential to attract and retain tourists: "Tourists often tell us they do not have time to visit everything" (R2). Additionally, the shift toward prominent shopping centers and the erosion of traditional commerce have diminished the local economy's resilience ("These large commercial giants 'kill' the small shops, leading to the decline of many small businesses" [R19]).

This change in tourists' behavior reflects a broader failure to capture the cultural and historical values that make Macerata unique, indicating a missing connection within value propositions that must be reestablished to facilitate VR. Notably, A1 pinpointed that "there's a clear difficulty; they arrive without the necessary materials, and once they're here, they struggle to find information about what's worth visiting and where to go on their own." As E2 noted,

> Good tourism is made of cultural products. And that also makes sense for the inhabitants, because that's a way of doing tourism that does not bias or corrupt the actual nature of the city, its identity, its monuments, its cultural heritage, the altars, and so on.

The lack of focus on promoting lesser-known attractions and neglecting the green spaces further exacerbates the town's difficulties in retaining its historical and artistic heritage as sustainable assets. The consequences of this VU highlight the need for better coordination and collaboration among local stakeholders, including municipalities, businesses, and cultural institutions, to reverse the decline in tourism and commerce (Figure 5).

The interlocutors offered their insights for VR in Macerata, emphasizing the importance of tourism, culture, and community engagement. To sustainably capture value, the city must integrate local businesses, cultural offerings, and modern technology ("Macerata isn't well communicated" [A1]). For example, improving digital tools, like a mobile app to guide visitors through cultural experiences, can enhance engagement and promote local commerce: "It might be helpful in this regard, for example, to have an app that allows you to be guided to the parking lot or gives you a list of parking lots closest to where you need to go" (R17). On the contrary, T2 reflected, "If Macerata's tourism office had good TikTok or Instagram profiles, it would be better." Additionally, fostering collaborations and coordination between museums, restaurants, and shops can create a cohesive tourist experience that disseminates benefits across sectors: "Promotion must therefore be done in an integrated way; it is not a single event that makes the difference, but strategically planned, holistic promotion" (R18). Establishing a link between local heritage, such as historic centers, cultural events, and infrastructure improvements like transportation, can amplify the city's appeal year-round. L3 emphasized, "Everything else is marginalized to the summer months, but it is still unstructured hit-and-run tourism. These are not flows that are more consistent in some years than others."

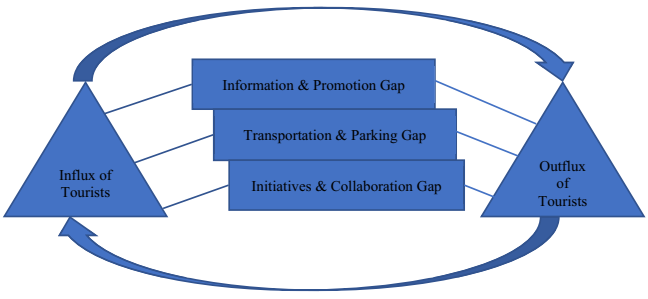

FIGURE 5 | VU/VR loop.

Lastly, enhancing stakeholder communication is critical to ensure that tourists are informed and invited to heterogeneous experiences, thereby sustaining economic growth and community development: "Actually, Macerata has a lot to tell. We should promote this historic city more and more" (R14). According to TG2,

> I think that this is the responsibility of the tour guides; people who work in hotels or museums should bear this in mind. We are not just selling a service, a view of a monument, or an experience. We are messengers of territory and history. We must find a way to to our audience, to their background and showing them behind the scenes—the culture, the traditions, the beauty of the land, and how people live here.

6 | Discussion and Conclusion

6.1 | Closing the VLs by Recapturing Value

Overtourism and undertourism exemplify value dynamics within the VL. While statistical data provides important insights, it is not sufficient. A more complete understanding of how value is captured, uncaptured, and recaptured requires triangulating evidence. The case of Macerata illustrates that secondary undertourism is not an isolated, paradoxical phenomenon, but one with relevance for other contexts, including touristic hotspots like Majorca (Blázquez-Salom et al. 2023), seasonal destinations like the Białka Tarzańska ski resorts (Żemła and Szromek 2023), and health resorts in Europe (Szromek 2021). Recognizing this value paradox is essential for designing value propositions and business models that balance visitor flows without undermining the resilience of local economies.

The responses we gathered allowed us to propose several solutions for closing the identified VLs within the local ecosystem (Figure 6). First, cultural heritage and tourism are central to VR. Macerata's historic university, monuments, and the Sferisterio Opera Festival offer a unique cultural identity and atmosphere, providing a prospective sustainable competitive advantage. To leverage this, integrated promotional efforts should align local businesses with cultural heritage and related events—such as joint tickets for museums and restaurants or guided tours—so that tourists experience a more coherent and immersive stay. Additionally, infrastructure improvements—particularly better multimodal connections with regional transport hubs such as Falconara and Ancona Airport—can enhance Macerata's accessibility. However, environmental costs need to be considered carefully when designing alternatives to car-based travel. Dispersing arrivals across different transport modes, instead of increasing overall tourist inflows, can reduce traffic congestion, lower emissions, and support sustainable tourism growth. Establishing a year-round tourist offer, not limited to summer festivals, could further stabilize yearly tourism flows. Finally, addressing the question, *Who will accept "reworked" or "refurbished" value?*, our study's findings reveal that VR derived from traditional sources, such as tourism, is more attractive than that from less appealing peers.

FIGURE 6 | VR pillars.

Second, digital tools are crucial for creating sustainable and engaging tourism experiences. For instance, a dedicated value proposal app that connects visitors with lesser-known sites and businesses can drive interest to overlooked areas. By providing tourists with real-time information about the city's events, restaurants, and other points of interest, this technology improves visitor satisfaction while boosting local business visibility. Furthermore, as creating digital twins of local attractions is becoming more popular nowadays (White et al. 2021), utilizing the concept for tourism simulations enhances a city's competitiveness, innovativeness, and overall appeal.

Finally, public-private partnerships also aid sustainable development by bringing together local stakeholders, such as shop owners, cultural institutions, and municipal bodies, to enhance the city's marketing efforts.

In summary, sustainable VR is to be driven through strategic partnerships between cultural, economic, and technological initiatives underpinned by year-round tourism management efforts. Infrastructure improvements, better communication among stakeholders, and integration of digital solutions collectively ensure the city's long-term economic vitality. Combining the tourism carrying capacity of Pásková et al. (2021) with the value limitation loop (Figure 2), we conceptualize the temporal fluctuations of tourists' inflow over time as a consequence of value creation, limitation, (un)capture, and recapture (Figure 7). Sharp peaks in unsustainable VC and VU indicate replicating the same, unsustainable business practices. We argue that the peaks can be smoothed and widened: when more visitors decide to stay in the given destination, and for a longer period, the more value local businesses can offer to them.

A holistic understanding of sustainable tourism growth is needed, as sustainability in tourism cannot be reduced to simply attracting more visitors or extending their stays; it involves facilitating the management of VLs across diverse stakeholders. As the literature highlights, sustainability in tourism necessitates careful planning (Mahendru et al. 2024; Patterson et al. 2007) to manage visitor impact and balance economic, social, and environmental needs (Mihalic 2020). Being a "sustainable tourist" may inadvertently harm specific stakeholders. For instance, choosing to fly into Ancona and avoiding Florence may reduce pressure on an "overtouristed" destination; this redirects value flows by reducing visitor pressure from Florence while simultaneously adding to local businesses in Macerata that depend on tourists.

Next, questions arise about the optimal length of their stay. While shorter visits may reduce environmental pressures, longer ones may support deeper local community engagement and greater economic returns; the latter, however, can lead to increased (over)use of local resources. In this sense, sustainable tourism growth in Macerata should not be framed as a linear increase in arrivals. Instead, it should be a strategic reconfiguration within the value cascade—capturing, redistributing, and sometimes intentionally uncapturing value—to align tourism flows with the resilience of local ecosystems and stakeholder networks.

6.2 | Study Contributions

Our research highlights overtourism and secondary undertourism as manifestations of value (un)capture and (re)capture. These concepts go beyond their traditional role as mere challenges in tourism and management research to illustrate core value logics. We contribute to the contemporary scholarly discussion by outlining means to overcome these paradoxes, as discussed below.

6.2.1 | Overcoming the Contradictions of Sustainable VLs as Paradoxical Concepts

Sustainable VLs in oversupply and undersupply require a holistic approach to address the often conflicting demands of economic growth, cultural preservation, and environmental concerns (Nobre 2025). The case of Macerata highlights the complexity of managing seasonal tourism spikes, particularly through cultural events like festivals, while mitigating the challenges of underutilized resources during the off-peak season. To manage this, Macerata's heritage should be re-evaluated as an attraction in its own right, rather than simply as a venue for performers who do not align with the city's inherent value.

Moreover, fostering collaboration among businesses, cultural institutions, and municipal authorities is crucial for developing cohesive marketing and operational plans that improve visitor experience and local engagement. By addressing the tension between mass and niche tourism, discerning visitors through flexible business practices, and promoting authentic, localized experiences, the city can further stabilize its economic impact. Additionally, resolving sustainability paradoxes, such as balancing pedestrian-friendly environments with modern transportation needs, requires innovative urban planning or enhancements that prioritize long-term ecological sustainability without sacrificing accessibility. Ultimately, Macerata's potential for sustainable VR hinges on strategic efforts within the ecosystem that harmonize cultural, economic, and environmental aspirations, ensuring resilience and growth for both the city and its broader region.

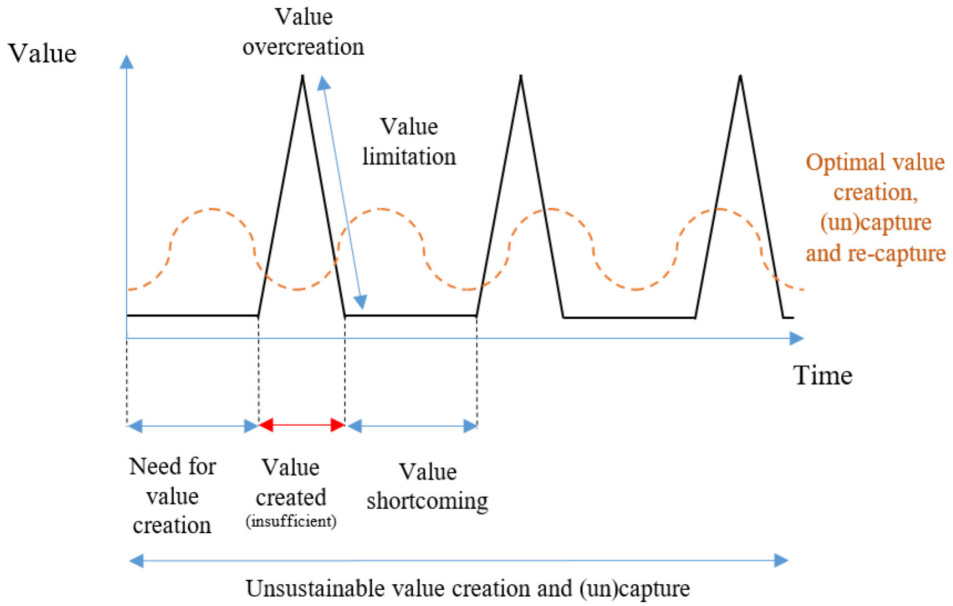

FIGURE 7 | Time dimension of qualitative growth in VC and VU.

6.2.2 | Overcoming the SV Contradictions: From Paradox to Performance

The VL introduced in this paper is a means to overcome the fixed-pie assumption in the discussion on VC and value distribution (Schwartz 2024). The example of analyzing the overtourism and secondary undertourism in Macerata highlights the complexities of sustainable VU and VR. A leading paradox emerges between managing high tourist volumes during peak events and addressing off-peak periods marked by secondary undertourism. The city's reliance on the regular inflow of students and academics and its niche appeal underscore the need for more integrated tourism approaches. For instance, meeting students' needs for entertainment, such as festivals, concerts, and events, can attract segments of visitors that are not covered by already established tourism management.

What is more, addressing logistical barriers, such as public transportation and parking, alongside technological innovations like mobile apps or digital twins, can help distribute tourist flows more evenly. By enhancing year-round tourism and integrating local cultural experiences, Macerata can navigate the challenges of sustainable VR, striking a balance between economic growth and preserving its unique heritage. We are adopting a more holistic view of the co-existence of economic activities and environmental protection with respect to the need for preserving the cultural heritage (Guimarães-Costa et al. 2025).

6.2.3 | Tourism VLs as a Sustainable Recapture Paradox

The concept of overtourism as a sustainable VR paradox highlights the tension between maximizing tourism revenue and preserving a destination's cultural, social, and environmental integrity. In Macerata, overtourism during peak summer events strains local infrastructure, while undertourism in the off-season leaves businesses struggling to survive. This imbalance reflects a broader paradox where efforts to boost tourism inadvertently undermine long-term sustainability. Promoting lesser-known attractions and dispersing tourist flows more evenly throughout the year is the expected result of resolving this issue. However, the challenge remains in balancing mass tourism with niche cultural experiences, which is vital for sustaining local businesses without overwhelming the city. Addressing these imbalances requires a holistic approach that integrates cultural heritage, technology, and local stakeholder collaboration.

7 | Theoretical and Practical Implications

Our study contributes to research and business practice by exploring the intricate dynamics of sustainable VU and VR in circular business practices within the tourism sector (del Vecchio et al. 2022; Zucchella and Previtali 2019). By integrating SV loops with paradoxical concepts in VR, this research presents a novel perspective on managing the delicate balance between economic success, environmental responsibility, and social equity.

7.1 | Theoretical Implications

This research advances the comprehension of SV loops by highlighting the interconnectedness of VU and VR. Introducing the value cascade and its layers offers a luminous framework to visualize the value flow. This framework enriches the existing literature by demonstrating the dynamic and cyclical nature of value creation, delivery, uncapture, and recapture. By analyzing value dynamics and their capture, this manuscript offers a conceptual alternative to quantitative overtourism metrics such as carrying capacity and crowd matrix.

Furthermore, by identifying paradoxes such as SUP and SRP, the paper explores the inherent tensions in sustainable practices. For example, pursuing an optimal outcome in one area

(such as environmental protection) may unintentionally affect another (such as economic prosperity). Interestingly, the intentional uncapturing of value emerges as a counterintuitive yet effective strategy to address these tensions (Kabalska and Wagner 2024).

Going beyond the illustrative case of overtourism and undertourism, Table 3 allocates the paradoxes discussed in previous literature into the sustainable development framework, which is built on the dimensions of the value cascade (Figure 1) and the Value Limitation Loop Paradox Framework (Figure 2).

As seen in Table 3, previous research has not fully addressed the dimensions of the Value Limitation Loop Paradox Framework. This study contributes, first, by emphasizing value abundance as a critical dimension for sustainable development in dynamic markets, a departure from the typical focus on value limitations. Second, existing sustainable development research has frequently presupposed consumer self-availability without sufficiently elaborating on its underlying factors. This approach overlooks a key distinction: unlike the often short-term scope of technology acceptance, self-availability represents a commitment to lifelong sustainable behaviors and thus requires a more nuanced theoretical framework. These contributions highlight the imperative for comprehensive, multi-dimensional approaches to sustainability that transcend linear models to embrace iterative processes, acknowledging trade-offs and interdependencies.

Going beyond the illustrative tourism example, the value limitation loop paradox, evident in oversupply and undersupply, offers a robust perspective on the cyclical struggles associated with resource use and VC. Understanding how excessive restrictions can produce unforeseen secondary shortages, this paradox provides a novel framework for analyzing similar sectors grappling with constrained resource allocation (VC and VU).

7.2 | Practical Implications

Transforming the paradox into operational tourism management practices requires two types of knowledge. First is knowledge about VU and dispersion in the region. This knowledge gap on the side of the tourists triggers various types of promotions and also innovations, as addressed in the center pillar of Figure 6. The knowledge consolidation on the side of the tourism service providers has recently been addressed in scholarly research (Moliterni et al. 2025). Secondly, knowledge about how to establish the VR processes and to organize an ongoing mutual learning process that calls for integrating organizational ontology research (Hahn and Knight 2021) into tourism-oriented scholarship.

This study offers novel insights for policymakers and stakeholders aiming to implement effective, sustainable approaches within the ecosystem since it emphasizes the importance of collaboration to address challenges related to overtourism and the emergence of secondary undertourism. A key takeaway is the need for public-private partnerships among municipal authorities, cultural institutions, and local businesses to develop comprehensive and sustainable tourism management. This coordinated approach can resolve issues like fragmented promotions and encourage joint investments in infrastructure, enhancing accessibility and visitor satisfaction. Consolidating knowledge turns out to be a pressing need in the context of the Macerata tourism ecosystem. Based on this, the stakeholders can establish a learning and innovation process (Mele and Russo-Spena 2018).

Digital tools such as tailor-made apps and digital twins of the local attractions are vital for sustainable VR. They provide real-time information, promote lesser-known attractions, and enable cities to test tourism management measures, balancing resource use with visitor experiences. Improving transportation means and urban planning can mitigate overtourism challenges like congestion. Better connections and sustainable mobility options like pedestrian-friendly zones can support environmental goals and visitor convenience. Leveraging cultural assets through joint promotional efforts and developing year-round tourism initiatives can stabilize visitor flows and strengthen local economies.

In conclusion, our study highlights the need for an ecosystem perspective in addressing sustainable VR challenges, providing pathways for equitable value creation across economic, environmental, and social dimensions.

TABLE 3 | Value capture paradoxes in the oversupply and undersupply framework.

Components of the value cascade	Value abundance	Value limitation	Value shortcoming	Need for value creation
Businesses (value to be prepared and delivered)		Implementation (un) sustainability	Sustainability intensification vs. profit maximization	Economic growth vs. resource conservation
Service providers (value delivery)		Technology efficiency vs. environmental impact	Sustainability intensification vs. profit maximization	
Customers value capture (self-availability)		Circularity vs. system complexity		
Businesses (value to be captured by its entity or by other entity)	Product longevity vs. product innovation		Sustainability intensification vs. profit maximization	

8 | Study Limitations and Further Research

This research uses a conceptual and exploratory framework, which limits the scope of its data collection and analysis. First, although our investigation centers on tourism—specifically on the challenges of over- and secondary undertourism, VU, and VR in Macerata, the findings need to be validated in industries with seasonal fluctuations of demand. Interesting domains are opened by the co-creation of non-financial value in platform-based value ecosystems (Chamakiotis and Petrakaki 2024).

Second, the reliance on qualitative data—from interviews and observations—constrains our ability to assess the paradoxes and VLs identified herein. While this qualitative approach provides valuable insights, it fails to offer statistical validation or to facilitate comparative analysis between different cases. Quantitative methodologies like surveys could bolster the concepts' credibility and general applicability.

Additionally, this research emphasizes theoretical constructs like VU, VR, and VL, which, though promising, need further empirical validation. The operationalization of these concepts is nascent, and assumptions regarding their seamless integration (e.g., of VR blueprints) or applicability (e.g., of the value limitation loop paradox) may oversimplify inherent complexities. To refine these frameworks and uncover nuances, future studies should validate them across various sectors. A limitation is the study's focus on overtourism and undertourism, restricting its application to domains with fluctuating value (un)capture. For instance, the dynamic of VR and VU is not prominent in places with permanent overtourism, such as Barcelona, making the VL less relevant. By addressing these limitations, researchers can enhance the practical significance and broader applicability of SV loops and their associated paradoxes.

Acknowledgments

The authors have nothing to report. Open Access funding enabled and organized by Projekt DEAL.

Funding

Agnieszka Kabalska prepared the paper with the support of AGH IDUB: Excellence Initiative—Research University Grant—Action 6: Funding international internships for young employees and doctoral students.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

References

Adner, R. 2017. "Ecosystem as Structure: An Actionable Construct for Strategy." *Journal of Management* 43, no. 1: 39–58. https://doi.org/10.1177/0149206316678451.

Argento, D., L. Broccardo, and E. Truant. 2022. "The Facets of the Sustainability Paradox." *Meditari Accountancy Research* 30, no. 7: 26–48. https://doi.org/10.1108/MEDAR-10-2020-1051.

Baldassarre, B., G. Calabretta, N. M. P. Bocken, and T. Jaskiewicz. 2017. "Bridging Sustainable Business Model Innovation and User-Driven Innovation: A Process for Sustainable Value Proposition Design." *Journal of Cleaner Production* 147: 175–186. https://doi.org/10.1016/j.jclepro.2017.01.081.

Barač–Miftarević, S. 2023. "Undertourism vs. Overtourism: A Systematic Literature Review." *Tourism: An International Interdisciplinary Journal* 71, no. 1: 178–192. https://doi.org/10.37741/t.71.1.11.

Bednar-Friedl, B., D. A. Behrens, and M. Getzner. 2012. "Optimal Dynamic Control of Visitors and Endangered Species in a National Park." *Environmental and Resource Economics* 52: 1–22. https://doi.org/10.1007/s10640-011-9515-5.

Bertocchi, D., N. Camatti, S. Giove, and J. van Der Borg. 2020. "Venice and Overtourism: Simulating Sustainable Development Scenarios Through a Tourism Carrying Capacity Model." *Sustainability* 12, no. 2: 512. https://doi.org/10.3390/su12020512.

Blázquez-Salom, M., M. Cladera, and M. Sard. 2023. "Identifying the Sustainability Indicators of Overtourism and Undertourism in Majorca." *Journal of Sustainable Tourism* 31, no. 7: 1694–1718. https://doi.org/10.1080/09669582.2021.1942478.

Bocken, N., K. Miller, and S. Evans. 2016. "Assessing the Environmental Impact of New Circular Business Models." Proceedings of the "New Business Models"—Exploring a Changing View on Organizing Value Creation, Toulouse, France, 1, 16–17.

Borchardt, M., M. G. da Silva, M. N. M. de Carvalho, et al. 2024. "Uncaptured Value in the Business Model: Analysing Its Modes in Social Enterprises in the Sustainable Fashion Industry." *Journal of Creating Value* 10, no. 1: 79–101. https://doi.org/10.1177/23949643231220777.

Bouchon, F., and M. Rauscher. 2019. "Cities and Tourism, a Love and Hate Story; Towards a Conceptual Framework for Urban Overtourism Management." *International Journal of Tourism Cities* 5, no. 4: 598–619. https://doi.org/10.1108/IJTC-06-2019-0080.

Bowman, C., and V. Ambrosini. 2000. "Value Creation Versus Value Capture: Towards a Coherent Definition of Value in Strategy." *British Journal of Management* 11, no. 1: 1–15. https://doi.org/10.1111/1467-8551.00147.

Camera di Commercio Delle Marche. 2021. "Importi Diritto Annuale 2021." https://www.marche.camcom.it/gestisci-la-tua-impresa/diritto-annuale/importi-scadenze/diritto-annuale-2021.

Chamakiotis, P., and D. Petrakaki. 2024. "Exploring Alternative (Non-Economic) Forms of Value Engendered by Digital Platforms." *Information Systems Journal* (early view) 35: 1093–1100. https://doi.org/10.1111/isj.12576.

Chamber of Commerce. 2025. https://macerata.cna.it/analisi-della ndamento-delle-imprese-nella-provincia-di-macerata/.

Chaturvedi, R., S. Verma, V. Srivastava, and S. S. Khot. 2025. "Exploring the Frontier of Anthropomorphism in AI Agents: Trends and Way Forward." *Business and Society Review* 130, no. 1: 42–80. https://doi.org/10.1111/basr.70002.

del Vecchio, P., C. Malandugno, G. Passiante, and G. Sakka. 2022. "Circular Economy Business Model for Smart Tourism: The Case of Ecobnb." *EuroMed Journal of Business* 17, no. 1: 88–104. https://doi.org/10.1108/EMJB-09-2020-0098.

Dodds, R., and R. Butler. 2019. "The Phenomena of Overtourism: A Review." *International Journal of Tourism Cities* 5, no. 4: 519–528. https://doi.org/10.1108/IJTC-06-2019-0090.

Ellen MacArthur Foundation. 2023. "The Global Commitment." https://www.ellenmacarthurfoundation.org/global-commitment-2023/overview.

Esposito, M., T. Tse, and K. Soufani. 2018. "Introducing a Circular Economy: New Thinking With New Managerial and Policy

Implications." *California Management Review* 60, no. 3: 5–19. https://doi.org/10.1177/0008125618764691.

Evans, P. C., and R. C. Basole. 2016. "Revealing the API Ecosystem and Enterprise Strategy via Visual Analytics." *Communications of the ACM* 59, no. 2: 26–28. https://doi.org/10.1145/2856447.

Falkenreck, C., and R. Wagner. 2022. "From Managing Customers to Joint Venturing With Customers: Co-Creating Service Value in the Digital Age." *Journal of Business & Industrial Marketing* 37, no. 3: 643–656. https://doi.org/10.1108/JBIM-02-2020-0100.

Geissdoerfer, M., P. Savaget, N. M. Bocken, and E. J. Hultink. 2017. "The Circular Economy—A New Sustainability Paradigm?" *Journal of Cleaner Production* 143: 757–768. https://doi.org/10.1016/j.jclepro.2016.12.048.

Gioia, D. A., K. G. Corley, and A. L. Hamilton. 2013. "Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology." *Organizational Research Methods* 16, no. 1: 15–31. https://doi.org/10.1177/1094428112452151.

Goodwin, H. 2017. "The Challenge of Overtourism." *Responsible Tourism Partnership* 4: 1–19.

Guimarães-Costa, N., G. Schmidt, K. P. Schulz, and S. Waddock. 2025. "Moving the Logic of Sustainability Towards Flourishing-for-All." *Business and Society Review* 130: 134–151. https://doi.org/10.1111/basr.12376.

Hahn, T., and E. Knight. 2021. "The Ontology of Organizational Paradox: A Quantum Approach." *Academy of Management Review* 46, no. 2: 362–384. https://doi.org/10.5465/amr.2018.0408.

Higgins-Desbiolles, F., S. Carnicelli, C. Krolikowski, G. Wijesinghe, and K. Boluk. 2019. "Degrowing Tourism: Rethinking Tourism." *Journal of Sustainable Tourism* 27, no. 12: 1926–1944. https://doi.org/10.1080/09669582.2019.1601732.

Iansiti, M., and K. R. Lakhani. 2020. *Competing in the Age of AI: Strategy and Leadership When Algorithms and Networks Run the World*. Harvard Business Review Press.

ISTAT – Italian National Statistics Institute Nazionale di Statistica. 2025. https://www.istat.it/en/.

Jacobides, M. G., C. Cennamo, and A. Gawer. 2018. "Towards a Theory of Ecosystems." *Strategic Management Journal* 39, no. 8: 2255–2276. https://doi.org/10.1016/j.respol.2006.09.005.

Kabalska, A., and R. Wagner. 2024. "The Joys of Giving Up ... Embracing the Motivations and Gratifications of Intentional Value Uncapture in Sustainable Development." *Business Strategy and the Environment* 34, no. 2: 1972–1992. https://doi.org/10.1002/bse.4078.

Koens, K., A. Postma, and B. Papp. 2018. "Is Overtourism Overused? Understanding the Impact of Tourism in a City Context." *Sustainability* 10, no. 12: 4384. https://doi.org/10.3390/su10124384.

Koskela-Huotari, K., K. Svärd, H. Williams, J. Trischler, and F. Wikström. 2024. "Drivers and Hinderers of (Un)sustainable Service: A Systems View." *Journal of Service Research* 27, no. 1: 106–123. https://doi.org/10.1177/10946705231176071.

Lacy, P., and J. Rutqvist. 2015. *Waste to Wealth: The Circular Economy Advantage*. Vol. 91. Palgrave Macmillan. https://doi.org/10.1057/9781137530707.

Long, C., S. Lu, J. Chang, J. Zhu, and L. Chen. 2022. "Tourism Environmental Carrying Capacity Review, Hotspot, Issue, and Prospect." *International Journal of Environmental Research and Public Health* 19, no. 24: 16663. https://doi.org/10.3390/ijerph192416663.

Lorenzini, E., V. Calzati, and P. Giudici. 2011. "Territorial Brands for Tourism Development: A Statistical Analysis on the Marche Region." *Annals of Tourism Research* 38, no. 2: 540–560. https://doi.org/10.1016/j.annals.2010.10.008.

Mahendru, M., V. Arora, R. Chatterjee, G. D. Sharma, and I. Shahzadi. 2024. "From Over-Tourism to Under-Tourism via COVID-19: Lessons for Sustainable Tourism Management." *Evaluation Review* 48, no. 1: 177–210. https://doi.org/10.1177/0193841X231189805.

Marshall, M. N. 1996. "Sampling for Qualitative Research." *Family Practice* 13, no. 6: 522–526. https://doi.org/10.1093/fampra/13.6.522.

Mele, C., and T. Russo-Spena. 2018. "A Dynamic Alternative to Linear Views on Innovation: Combining Innovating in Practice With Expansive Learning." In *The SAGE Handbook of Service-Dominant Logic*, 536–560. Sage.

Mihalic, T. 2020. "Conceptualising Overtourism: A Sustainability Approach." *Annals of Tourism Research* 84: 103025. https://doi.org/10.1016/j.annals.2020.103025.

Milano, C., M. Novelli, and A. P. Russo. 2024. "Anti-Tourism Activism and the Inconvenient Truths About Mass Tourism, Touristification and Overtourism." *Tourism Geographies* 26, no. 8: 1313–1337. https://doi.org/10.1080/14616688.2024.2391388.

Moliterni, S., K. Zulauf, and R. Wagner. 2025. "A Taste of Rural: Exploring the Uncaptured Value of Tourism in Basilicata." *Tourism Management* 107, no. 10506: 9. https://doi.org/10.1016/j.tourman.2024.105069.

Nieuwland, S., M. Lavanga, and K. Koens. 2025. "Using Adaptive Cycles and Panarchy To Understand Processes of Touristification and Gentrification in Valencia, Spain." *Tourism Management* 106: 105011. https://doi.org/10.1016/j.tourman.2024.105011.

Nobre, F. S. 2025. "Unleashing Virtuous Cycles of Sustainable Development Goals and Well-Being." *Business and Society Review* 130, no. S1: 288–319. https://doi.org/10.1111/basr.12339.

Page, S. J., and M. Duignan. 2023. "Progress in Tourism Management: Is Urban Tourism a Paradoxical Research Domain? Progress Since 2011 and Prospects for the Future." *Tourism Management* 98: 104737. https://doi.org/10.1016/j.tourman.2023.104737.

Pai, C. K., H. Chen, T. J. Lee, S. S. Hyun, Y. Liu, and Y. Zheng. 2024. "The Impacts of Under-Tourism and Place Attachment on Residents' Life Satisfaction." *Journal of Vacation Marketing* 30, no. 4: 694–712. https://doi.org/10.1177/13567667231164807.

Palakshappa, N., S. Venkateswar, and S. Ganesh. 2023. "Broadening the Circle: Creativity, Regeneration and Redistribution in Value Loops." *Social Responsibility Journal* 19, no. 10: 1870–1884. https://doi.org/10.1108/SRJ-09-2022-0367.

Pásková, M., G. Wall, D. Zejda, and J. Zelenka. 2021. "Tourism Carrying Capacity Reconceptualization: Modelling and Management of Destinations." *Journal of Destination Marketing & Management* 21: 100638. https://doi.org/10.1016/j.jdmm.2021.100638.

Patterson, T. M., V. Niccolucci, and S. Bastianoni. 2007. "Beyond "More Is Better": Ecological Footprint Accounting for Tourism and Consumption in Val di Merse, Italy." *Ecological Economics* 62, no. 3–4: 747–756. https://doi.org/10.1016/j.ecolecon.2006.09.016.

Peeters, P. M., S. Gössling, J. Klijs, et al. 2018. "Research for TRAN Committee-Overtourism: Impact and Possible Policy Responses." European Parliament, Policy Department for Structural and Cohesion Policies.

Raab, K., R. Wagner, M. Ertz, and M. Salem. 2023. "When Marketing Discourages Consumption: Demarketing of Single-Use Plastics for City Tourism in Ottawa, Canada." *Journal of Ecotourism* 22, no. 3: 375–405. https://doi.org/10.1080/14724049.2022.2028794.

Rahi, S. 2017. "Research Design and Methods: A Systematic Review of Research Paradigms, Sampling Issues and Instruments Development." *International Journal of Economics & Management Sciences* 6, no. 2: 1–5. https://doi.org/10.4172/2162-6359.1000403.

Ramaswamy, V., and K. Ozcan. 2018. "What Is Co-Creation? An Interactional Creation Framework and Its Implications for Value

Creation." *Journal of Business Research* 84: 196–205. https://doi.org/10.1016/j.jbusres.2017.11.027.

Regione Marche. 2024. "Le Marche in Cifre." https://statistica.regione.marche.it/Portals/0/Settori/ambiente_e_territorio/d1bfdeee-MIC_2024.pdf.

Rescher, N. 2021. *Quantitative Studies in Philosophy*. Cambridge Scholars Publishing.

Rodríguez-Peris, A., and M. Segarra-Oña. 2019. "Identifying Key Stakeholders' Relationships Using a Quantitative Analysis: An Empirical Application." In *Corporate Social Responsibility in the Manufacturing and Services Sectors*, edited by P. Golinska-Dawson and M. Spychała. Springer. https://doi.org/10.1007/978-3-642-33851-9_9.

Sainsbury, R. M. 2009. *Paradoxes*. Cambridge University Press. https://doi.org/10.1017/CBO9780511812576.

Schwartz, M. S. 2024. ""Creating Shared Value": Time for a Normative Extension?" *Business and Society Review* 129, no. 2: 185–209. https://doi.org/10.1111/basr.12358.

Stahel, W. R. 2016. "The Circular Economy." *Nature* 531, no. 7595: 435–438. https://doi.org/10.1038/531435a.

Statistica Regione Marche. 2025. "Arrivi e Presenze Totali per Tipo di Esercizio, Mese e Provincia delle Marche - Anno 2024." https://statistica.regione.marche.it/Portals/0/Settori/turismo/5d23be6c-Arrivi%20e%20presenze%20italiani%20stranieri%20e%20totali%20per%20mese,%20tipo%20di%20esercizio%20e%20provincia%20delle%20Marche_2024.xlsx.

Szromek, A. R. 2021. "The Role of Health Resort Enterprises in Health Prevention During the Epidemic Crisis Caused by COVID-19." *Journal of Open Innovation: Technology, Market, and Complexity* 7, no. 2: 133. https://doi.org/10.3390/joitmc7020133.

Vargo, S. L., and R. F. Lusch. 2004. "Evolving to a New Dominant Logic for Marketing." *Journal of Marketing* 68, no. 1: 1–17. https://doi.org/10.1509/jmkg.68.1.1.24036.

Wagner, R., and A. Kabalska. 2025. "Between Involvement and Profit: Value (Un-)Captured by a Born-Social Start-Up." *Journal of Social Entrepreneurship* 16, no. 2: 570–595. https://doi.org/10.1080/19420676.2023.2199765.

White, G., A. Zink, L. Codecá, and S. Clarke. 2021. "A Digital Twin Smart City for Citizen Feedback." *Cities* 110: 103064. https://doi.org/10.1016/j.cities.2020.103064.

Yang, M., S. Evans, D. Vladimirova, and P. Rana. 2017. "Value Uncaptured Perspective for Sustainable Business Model Innovation." *Journal of Cleaner Production* 140: 1794–1804. https://doi.org/10.1016/j.jclepro.2016.07.102.

Zaman, A. U., and S. Lehmann. 2013. "The Zero Waste Index: A Performance Measurement Tool for Waste Management Systems in a 'Zero Waste City'." *Journal of Cleaner Production* 50: 123–132. https://doi.org/10.1016/j.jclepro.2012.11.041.

Żemła, M., and A. R. Szromek. 2023. "From Overtourism to No-Tourism: Costs and Benefits of Extreme Volume of Tourism Traffic as Perceived by Inhabitants of Two Polish Destinations." *Journal of International Studies* 16, no. 2: 151–161. https://doi.org/10.14254/2071-8330.2023/16-2/10.

Zucchella, A., and P. Previtali. 2019. "Circular Business Models for Sustainable Development: A "Waste Is Food" Restorative Ecosystem." *Business Strategy and the Environment* 28, no. 2: 274–285. https://doi.org/10.1002/bse.2216.

Appendix A

(a)

(b)

FIGURE A1 | (a, b) Ceremonial opening of the Department of Economics and Law (University of Macerata) building after completed renovations due to the 2016 earthquake that impacted the Marche region (09/04/2024). *Source:* Authors.

(a)

(b)

FIGURE A2 | (a, b) Aperitivi Europei Festival in Macerata (09–11/05/2024). *Source:* Authors.

(a)

(b)

FIGURE A3 | Piazza della Liberta and cars parked in front of the historic Torre Civica (09/05/2024 [a] and 09/04/2024 [b]). *Source:* Authors.

FIGURE A4 | Tourism load in Macerata in the year 2024.

TABLE A1 | Key concepts, definitions, and relationships.

Concept	Definition	Distinctive features	Relationship/difference	Source
Sustainable value (SV)	Multidimensional value that balances economic, social, and environmental outcomes, benefiting stakeholders, society, and the natural environment.	Integrates triple bottom line; stakeholder- and (eco)system-oriented.	Provides the normative foundation; paradoxes emerge when achieving it is imbalanced.	E.g., Baldassarre et al. (2017)
Value uncaptured (VU)	Potential value that remains unrealized, overlooked, or intentionally left aside.	Latent opportunities may be hidden, neglected, or strategically uncaptured.	Entry point of value dynamics; basis for VR and VL.	E.g., Yang et al. (2017)
Value recapture (VR)	The process of reintegrating previously uncaptured or lost value into the value ecosystem.	Circularity, recovery, reuse, innovation; aligning with SV.	Direct response to contemporary VU; operationalizes loops of value renewal.	E.g., Chamakiotis and Petrakaki (2024)
Value loop (VL)	Cyclical process of creating, uncapturing, and re-capturing value among stakeholders.	Dynamic, iterative, systemic; emphasizes interdependencies.	Provide the context where paradoxes and feedback dynamics (value limitation loop vs. value capture) occur.	E.g., Koskela-Huotari et al. (2024)
Sustainable value uncapture paradox (SUP)	Situation where creating SV for some actors undermines it for others.	Inherent tensions and trade-offs across economic, social, and environmental dimensions.	Arise within VLs; demonstrate the limits of "win–win" sustainability.	Own conceptualization
Sustainable value recapture paradox (SRP)	Conflicting stakeholder perceptions and narratives about sustainability and SV.	Rooted in discourse, legitimacy struggles, and value differences.	Shape and amplify SUP by framing sustainability meanings.	Own conceptualization
Value limitation loop (VLL)	A feedback cycle where attempts to capture value restrict future opportunities, creating stagnation or decline.	Constraint-driven, self-limiting, negative feedback.	The opposite dynamic of VC; illustrates systemic lock-ins and diminishing returns.	Own conceptualization
Value cascade	A chain reaction where value generated in one context spills over into new contexts, creating additional flows.	Expansionary, positive spillovers, multiplier effects.	The opposite dynamic of VLL: reflects growth potential and systemic amplification.	Own conceptualization