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From global Doughnut sustainability to local tourism destination management

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Abstract

Purpose – This paper explores the intersection of global sustainability frameworks and local tourism management applying the Doughnut Economy model. The study aims to understand how destinations can bridge the gap between multidimensional, multilevel sustainability objectives and local execution, ultimately promoting a paradigm shift towards sustainable tourism. **Methodology –** We review the sustainable destination management literature as well as the Doughnut Economy framework and evaluate how the Doughnut model allows for an examination of how destinations can simultaneously address local needs and broader, systemic impacts. **Findings –** The integration of the Doughnut Economy model can help to ensure that the benefits and costs of tourism are in balance. Tourism destinations need to adopt consistent sustainable practices that align with both local aspirations and global sustainability targets. Digitalization can enhance the measuring and modelling of impacts and aid in steering behaviour. **Implications –** Destination managers have a role in the broader sustainability of tourism, and they will be required to apply comprehensive approaches such as the Doughnut model supported by digital solutions to balance social and ecological demands at local and global levels.

Keywords: tourism destination management, Doughnut economy, paradigm shift, sustainability
JEL classification: Z32, Q56

Od globalne održivosti tipa šuplje krofne do upravljanja lokalnim turističkim destinacijama

Sažetak

Svrha – Ovaj rad istražuje presek globalnih okvira održivosti i lokalnog upravljanja turizmom, primenjujući model ekonomije krofne. Studija ima za cilj da razume kako destinacije mogu premostiti jaz između višedimenzionalnih, višeslojnih ciljeva održivosti i lokalne realizacije istih, promovišući promenu paradigme ka održivom turizmu. **Metodologija –** Literaturu o održivom menadžmentu destinacije, kao i okvir ekonomije krofne smo pregledali, kako bi se procenilo da li model krofne omogućava ispitivanje načina

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na koje destinacije mogu istovremeno da odgovore na lokalne potrebe i šire, sistemske uticaje. **Rezultati –** Integracija modela ekonomije krofne može pomoći u postizanju ravnoteže između troškova i koristi turizma. Turističke destinacije treba da usvoje dosledne održive prakse koje su u skladu sa lokalnim težnjama i globalnim ciljevima održivosti. Digitalizacija može poboljšati merenje i modeliranje uticaja i pomoći u upravljanju. **Implikacije –** Menadžeri destinacija imaju ulogu u široj održivosti turizma, i od njih će se tražiti da primenjuju sveobuhvatne pristupe, kao što je model ekonomije krofne, koji treba da budu podržani digitalnim rešenjima kako bi se uravnotežili društveni i ekološki zahtevi na lokalnom i globalnom nivou.

Ključne reči: menadžment turističkih destinacija, ekonomija krofne, promena paradigme, održivost
JEL klasifikacija: Z32, Q56

1. Introduction

Globalization has brought the people from around the world closer together. Our common understanding about different countries and regions and our awareness of our common problems has grown, including global economic, social, and environmental problems. At the same time, the world has become more complex to manage concerning our common challenges such as climate change, loss of biodiversity and ecosystem services, child labor, or sex tourism that violates human rights. Managing the desired development is difficult due to decentralized decision-making: citizens make decisions about consumption, businesses try to survive in global competition, regions aspire to enhance local vitality, states pursue economic and political influence, international organizations try to co-operate, but no one has the power to coordinate and control the total system. We can call these wicked problems because there seldom are easy and unambiguous solutions to such multidimensional problems.

In principle, when acting as consumers, workers or managers, people want to make right and ethical choices. Local tourism destination management faces more challenges than ever in pursuing the co-existence of multiple dimensions (economic, social, environmental) and levels (from global and systemic to local and specific) of sustainability. Coordinating the demands and finding the balance is almost a mission impossible. For example, there may be a conflict between the pressing global climate targets and local targets, if wind or solar energy disturbs nature, landscape, or culture. The need for correct, topical, and relevant information is huge.

Obviously, there is a need to adopt a consistent framework that considers local and global demands at the same time. This paper applies the Doughnut economy model (Hartman & Heslinga, 2023; Raworth, 2012; Raworth, 2017) to sustainable tourism destination management. The core idea is that destination management at the local level must implement the different dimensions of sustainability and targets from different levels in a systematic way avoiding inconsistencies.

The big question, then, is how to find the best practices for local tourism destination management. We propose that a first step is adopting the Doughnut model as a global framework. This framework, however, is quite an abstract one and it does not convert easily into practical local actions. We believe that because of the complex nature of the wicked problems, multidisciplinary research and expertise is needed. A possible consensus or mutual understanding within the scientific community can gradually lead to a conceptual understanding, which can lead to strategically coherent choices and concrete actions at

tourism destinations. Within the unified framework, technology can aid us with the information problems in the context of 'smart' tourism destination management.

Because of recent advances in technology, the role and potential of smartness and digital solutions toward the sustainability goal in a tourism destination are also considered here. The rapid development of digitalization, big data, artificial intelligence, and digital twins is promising, and it may offer a realistic possibility for systematic and consistent management of wicked problems in the near future. To tackle the problems, we must be able to gather and screen the relevant data, to recognize fundamental relations between variables and their intensities and finally, to convert all of it into strategic and operative knowledge.

Therefore, we will address the following research questions:

- what does a Doughnut approach to destination management mean as guiding principles?
- what is the role of smartness and digital solutions in managing local and global sustainability?

The paper proceeds as follows. Section 2 reviews the literature on sustainable destination management to identify gaps in the understanding of systemic sustainability. Section 3 presents the Doughnut economy model (3.1.), applies it to the challenges of tourism destination management (3.2.), and discusses the role and potential of digitalization as a means to achieve the Doughnut goals (3.3.). Section 4 discusses the differences between traditional destination management and managing towards Doughnut-type sustainability. Section 5 concludes the paper.

2. Sustainable tourism destination management: Literature review

There is broad global consensus on the need for sustainable tourism. The UN resolution on "Promotion of sustainable and resilient tourism, including ecotourism, for poverty eradication and environmental protection" (UN General Assembly, 2022b) was supported by all UN member states. The Glasgow Declaration on Climate Action in Tourism (One Planet Sustainable Tourism Programme, 2021) is open for governments, companies, and NGOs to sign.

The tourism marketing paradigm has long emphasized the importance of sustainability (Jamrozy, 2007; Pomering, 2011). It is widely agreed that sustainable tourism destination management must embrace the economic, sociocultural, and environmental elements of sustainability (European Commission, 2016; Sveisndottir et al., 2023; UNWTO, 2004). A multidisciplinary approach to sustainability in tourism, encompassing environmental responsibility, cultural vitality, social equity, and economic and financial aspects, is claimed to be crucial for destination management (Jenkins, 2013). The role of entrepreneurship and networking ability in achieving a sustainable destination is highlighted, emphasizing the need for a coordinated system (Ferri, 2017). Sustainability needs to be operationalized in the managerial and governance practices (Sveinsdottir et al., 2023). All things 'smart' are omnipresent (Fyall & Garrod, 2020). Artificial intelligence, Internet of Things, the circular economy, big data, and augmented or virtual reality are major trends (Loureiro & Nascimento, 2021).

Locally at the destinations, *overtourism* has emerged as a central sustainability issue, with both ecological and sociocultural factors setting limits on growth (Fyall & Garrod, 2020; Hartman & Heslinga, 2023; Reinhold et al., 2023). Destinations desire the benefits of tourism while upholding destination quality and avoiding the worst burdens. Fyall and Garrod (2020) see the task as protecting the welfare of two groups of people: tourists and

residents. The number of tourists as well as their behavior may need to be controlled. Svalbard, Norway, is now paying attention to sociocultural issues, and in Nuuk, Greenland, emphasis is shifting to environmental regulation (Sveinsdottir et al., 2023). In Western Norway, red zones prohibiting camping have been established to protect nature from surfers (Engeset et al., 2023). Locals desire control over the influxes of tourists in time and space (Engeset et al., 2023). According to Sveinsdottir et al. (2023), the solution to locally sustainable tourism is adaptive co-management, where targets are jointly agreed on, and regulation is set as needed. Constructive agency of all co-managers may aid in building tourism that is locally sustainable in both ecological and sociocultural sense (James & Halkier, 2023).

Tourists and destination residents are not, however, the only actors relevant to the sustainability of tourism. In their ecotourism footprint study, Mancini et al. (2022) found that international travel to and from destinations and the production of food and drink consumed by tourists can have much heavier impacts on ecosystems than their stay. Overtourism with all its impacts is a local but also a systemic, global, and planetary problem.

Reinhold et al. (2023) believe that future work on destination management might pay more attention to planetary boundaries. Hartman and Heslinga (2023) propose a need for a paradigm shift in tourism destination management. They see the Doughnut model as resonating with regenerative tourism, resilience, transitions thinking, and purpose economy.

3. Doughnut economy model and its application to sustainable tourism destination management

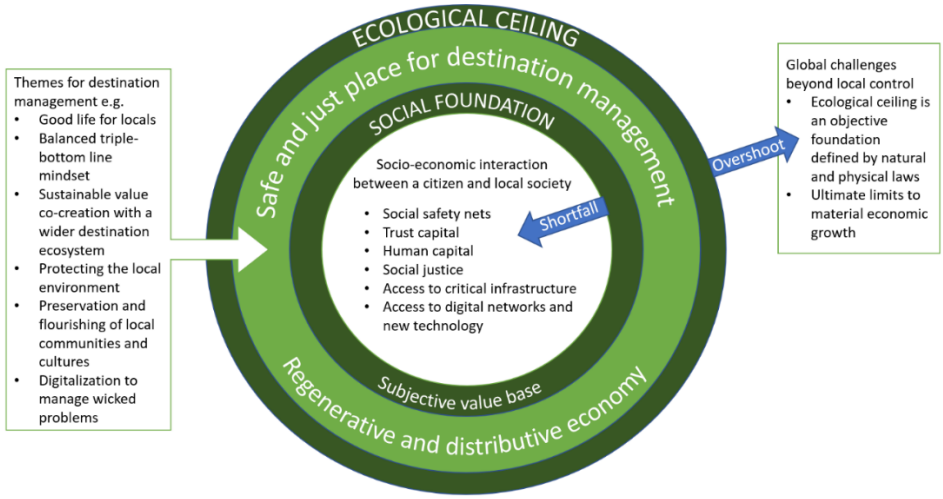
3.1. The Doughnut model

The *Doughnut economy*, coined by Kate Raworth (2012; 2017), is an approach to sustainability that has attracted considerable attention. The Doughnut model can provide a balanced perspective and target for sustainability transformation. It provides a holistic and systemic approach to operationalizing the Brundtland report's framework (WCED, 1987) on sustainable development with three dimensions: economic, social, and environmental sustainability.

The Doughnut economy model is characterized first by an objective element, the ecological ceiling, which cannot be overshot. Staying within the outer boundary of the Doughnut means that humanity is in a safe space where planetary boundaries are respected. Nine planetary boundaries have been defined (Rockström et al., 2009; Steffen et al., 2015) to guide humanity. Unfortunately, six of the boundaries have now been exceeded: biogeochemical flows, freshwater change, land system change, biosphere integrity, climate change and novel entities (Richardson et al., 2023). In addition, we are close to exceeding the ocean acidification boundary. With atmospheric aerosol loading and stratospheric ozone depletion, humanity is currently in the safe space.

Second, the Doughnut has its inner boundary. It is the social foundation, where humanity can flourish in an equitable way based on its prerequisites for a good life, including basic necessities (water, food, energy, housing) as well as health, education, and cultural community. Staying within the inner boundary of the Doughnut means staying in the just space. Between the ecological ceiling and the social foundation, the economy can be arranged in a balanced way (Raworth, 2017). The doughnut shape presumes that too much of good things can exert a too heavy burden on the planet, making the system unsafe, unsustainable, and ultimately unjust. Figure 1 applies Raworth's Doughnut to destination management.

Figure 1: The Doughnut model applied to destination management



Source: Authors' research

It is worth noting that the two parts of the Doughnut model are interesting from a philosophical point of view. Firstly, the ecological ceiling presents an objective sustainability target based on natural laws, defined by sciences such as physics and chemistry. Recognizing the ecological ceiling as objective, absolute, and set by the boundaries of the planet is useful for any field of business, including tourism destination management.

Secondly, the social foundation is subjective, and value based, which means it is a social construction of subjectively expressed human wants or moral beliefs. It is defined by humans themselves. Whether societies around the world are genuinely and broadly committed to the moral principles of just space can be questioned. However, we can see that many prerequisites for good life in the inner circle of the Doughnut have been recognized as human rights in the UN agreements (International Covenant on Civil and Political Rights 1966; International Covenant on Economic, Social and Cultural Rights 1966; Convention on the Rights of the Child 1989). Consequently, one can say that the just space in the Doughnut model represents shared human values. Our vision of the Doughnut sees a society based on trust capital and human capital where citizens have the capacities and the will to set balanced compromises if not shared goals.

3.2. Downscaling the Doughnut model to sustainable tourism destination management

We believe broad, systemic, and global perspectives on sustainable tourism deserve more attention in business and local destination governance. In the absence of a global body to regulate tourism, system level macro controls are missing, and no actor or organization can manage or control system level optimization. This underlines the significance of transparency and ethical considerations for safe and just choices *locally* by tourism service providers and their organizations, cities, and regional developers. Destinations can make the tourism economic system sustainable through their decisions. Tourism destination management processes traditionally have had limited possibilities to control macro-level issues. Today, individual operators are increasingly demanded to acknowledge and be transparent about their indirect and systemic impacts.

The Doughnut approach is planetary, and the safe and just space refers to the space for the whole humanity. The challenge with the Doughnut approach to global and planetary issues is that it must be downscaled and operationalized for local decision-making.

A few scholars have attempted to advance the quest of downscaling the Doughnut to a regional level (Turner, 2022; Warnecke, 2023), and some states and cities have adopted Doughnut targets. The Amsterdam City Doughnut Project is an example of an attempt to apply the Doughnut model in city-level decision-making. Amsterdam aims at sustainability in a local social, local ecological, global social, *and* global ecological sense. The local lenses are based on envisioning a good life in Amsterdam, and the global lenses are derived from the UN Sustainable Development Goals (SDGs) and the planetary boundaries. For destination management, the Doughnut approach is concretized by defining how it should steer tourism operations locally as well as the management of global supply chains and footprints of products and services. A Doughnut destination looks at four dimensions of sustainability (Table 1).

Table 1: Dimensions of a Doughnut destination

Local social: good life for the locals	**Global social**: good life for everyone in the tourism economic system
Local ecological: protecting the local environment	**Global ecological**: a tourism system respecting the planetary boundaries

Source: Authors' research

Locally, the ecological impacts are related, for example, to building sites, water use, waste recycling, and the trails in nature taken by tourists. Sustainable destination management could include the participation of residents in land use planning, transport solutions that do not worsen local air quality, and educating tourists about protecting local biodiversity and local cultural heritage. A good life for locals means not only income from tourism but also affordable housing and freedom from increased traffic, noise, and other disturbances. Employees also deserve a good life. Seasonal tourism workers come from all over the world. With decent salaries and working conditions and free from discrimination, workers can enjoy their fundamental rights both in their home and host countries and cultures (Ioannides et al., 2021).

For global social and global ecological sustainability, the *footprints* of tourism services and products are taken into focus. Negative impacts can be mitigated through sustainable supply chain management, and governments can support transformation by setting binding laws and targets concerning due diligence in supply chains. The EU Corporate Sustainability Due Diligence Directive (2024/1760) addresses both the global ecological and global social elements of sustainability, but only sets duties on large companies.

Decent jobs and livelihoods in global supply chains are a major element in the sociocultural sustainability of tourism. All goods and services used in tourism destinations, including buildings, boats, fishing tackle, electronics, and food, have their social footprints, including issues around workers' rights in supply chains. Some of the products used in Western destinations are made by enslaved people (see ILO et al., 2022), and the working conditions of particularly migrant workers may be dangerous and out of standards. The new EU Forced Labour Regulation will prohibit forced labor goods from entering the EU markets. Mining and agriculture providing goods for tourists may have negative spillovers on the traditional land uses, cultures, and livelihoods of indigenous peoples far from the destination (Kennedy et al., 2023). Human rights due diligence in supply chains of all products and services is a necessary part of managing a Doughnut destination.

The carbon, biodiversity and water footprints are integral for assessing the environmental sustainability of tourism in a global sense. Tourism is currently responsible for 8% of the world's carbon emissions (Sustainable Travel International, n.d.). Flights, air-conditioned hotels, and destroying forests and mangroves to build tourism infrastructure are among the worst problems for the climate. Replacing fossil fuels with renewable energy is needed. Carbon neutral destinations are a popular idea (Gössling, 2009). Even if all destinations operated on renewable energy, flights are integral to the system and must be accounted for. There is no human right to fly, but there is a human right to a clean, safe, healthy, and sustainable environment (UN General Assembly, 2022a; UN Human Rights Council, 2021). Individual passengers voluntarily offsetting their emissions (see Bösehans et al., 2020) does not solve the problem. In view of the climate planetary boundary, the aviation industry as a sector must target carbon neutrality. Destination managers have a role as they can demand or recommend low-carbon travel and compensated flights. The target for destination managers should be low-carbon, high-value tourism, where tourist arrivals are stabilized or reduced (Gössling & Higham, 2021).

A particular issue for Doughnut destination managers is the trade-off between climate and nature goals: renewable energy production can destroy local ecosystems, and electric vehicles and nuclear power need metals and minerals that cause the opening of new mines. Tourism also needs buildings, and additional buildings need additional materials. A partial solution may be the no-net-loss principle of biodiversity, including mitigation hierarchy and ecological compensation: if a company, for example, in the energy, mining, or construction industries, cannot avoid destroying an ecosystem, it must fully compensate for the destruction by protecting or restoring an ecosystem elsewhere (Gelcich et al., 2017). Tourism destination managers should require both a low carbon footprint and biodiversity no-net-loss from both local operators and from companies in their supply chains. Promoting a circular and sharing economy can save limited natural resources.

Cruise tourism is a growing segment in international tourism. Beyond the welfare of tourists and destination locals, a Doughnut cruise line pays attention to the rights of shipbuilders and ship staff alike. For environmental sustainability, not only shipping emissions, but the whole value chain must be considered from ship design (Könnölä et al., 2020) to vessel production (Gilbert et al., 2017) and ship recycling (Tola et al., 2023). Cruise tourism needs to negotiate with destinations and all their other stakeholders on how to avoid local and global environmental and sociocultural problems while ensuring a fair division of economic benefits (Klein, 2011).

Food and drink services are a major part of the tourism footprint. Breakfast, lunch, and dinner are crucial for the planetary boundaries for biodiversity, land conversion, and freshwater withdrawals as well as for the right to water and the right to a healthy environment of individuals and communities in the producing countries. The planetary boundaries for nitrogen and phosphorus loading and chemical pollution are connected to food via fertilizer and pesticide use. For example, coffee served at breakfast could be contributing to deforestation in Colombia (see Naranjo Barrantes et al., 2023) and orange juice to water scarcity in South Africa (see Munro et al., 2016). The Deforestation Regulation (EU 2023/115) will improve the environmental footprints of beef, soy, palm oil, coffee, cocoa, timber, rubber, and derived products sold in Europe and exported from Europe. In addition to forests, Doughnut destinations must pay attention to savannah, wetland, freshwater, and marine ecosystems in the supply chains of products used. Food waste should be reduced across the tourism system, including flights, cruise ships, hotels, and restaurants.

The marketing orientation towards respective, restorative, and ethical tourism requires transparency and honesty on the value promises and customers targeted. Ecotourism

marketing should be based on sincere values, intentions, and actions instead of greenwashing such as referring to minor benefits to distract from major problems. Safari tourism should aid in the long-term welfare of ecosystems and species, instead of benefiting from the animals while causing them stress that results in reproductive problems (Szott et al., 2019). Slow tourism is one trend that can contribute to the realization of human and planetary health (Klarin et al., 2023).

3.3. Applying digital solutions towards Doughnut goals

Digital transformation in tourism destinations is firmly linked to the overarching sustainability narrative. It is not just a technological shift, but a multi-layered phenomenon involving tourism destination ecosystem development, stakeholder engagement, and value co-creation. Digitalization and technological innovations now enable the utilization of rich data and modeling complex systems to monitor, analyze, test, and simulate sustainable solutions. Models such as digital twins may aid in finding solutions to wicked problems that were previously too complex to manage, such as overtourism (Rahmadian et al., 2023). Digitalization can also foster stakeholder engagement and facilitate adaptive governance models.

Technology can be used to strengthen environmental awareness and can aid in reducing stress on the environment. For example, combining data on the number of visitors and the routes taken by them to data on the condition of natural ecosystems and the ecosystem services they provide can aid in setting proper environmental targets and rules (Loureiro & Nascimento, 2019).

The ecosystem approach is often used to contextualize digital transformation in tourism destinations. In business research, ecosystem means a perspective that incorporates multiple stakeholders, including tourists, service providers, and governance bodies (Gretzel et al., 2015; Gutierriz et al., 2022). These ecosystems are increasingly becoming ‘smart’, facilitated by technologies like the Internet of Things (IoT), artificial intelligence (AI), and augmented reality (AR) (Buhalis, & Law, 2008; Neuhofer, 2016). IoT technologies, such as sensor networks and data analytics, have proven instrumental in environmental monitoring and sustainable resource management (Miorandi et al., 2012).

Digital platforms are becoming avenues for value co-creation, enabling tourists to transition from passive consumers to active participants in their experiences (Chen et al., 2018; Prahalad & Ramaswamy, 2004). This transformation is particularly relevant in the sustainability context, where engagement by stakeholders can significantly impact the long-term viability and responsible management of tourism destinations (Presenza et al., 2014).

Despite the numerous opportunities, digital transformation also brings challenges, including digital inequality and the pressing need for digital literacy for both service providers and consumers (Frenzel et al., 2022). That need necessitates a paradigm shift in management and governance, requiring investments in digital infrastructure and skill development among local communities to ensure that technology genuinely acts as an enabler for sustainable development (Law et al., 2014). Artificial intelligence and other digital technologies also raise some concerns about data privacy and security (Grundner & Neuhofer, 2021).

Data is not immaterial: it needs a physical infrastructure. Huge amounts of data require huge amounts of energy. Digitization of tourism is accompanied by a surge in photos and videos, contributing to environmental degradation (Guedes et al., 2022). Hence, there are also challenges in the environmental sustainability of digitalization. We must avoid the risk of energy-intensive data-based technologies offsetting their potential benefits for sustainability (Gössling, 2021).

4. Sustainable tourism at both destination level and systemic level

We apply the idea of Doughnut economy to tourism destination management as a systemic way to manage sustainability, in order to reach a safe and just space of tourism. Table 2 below illustrates the paradigm shift in tourism destination management from traditional approaches that prioritize economic growth and high tourist volumes toward more sustainable models.

Table 2: Traditional vs. Doughnut tourism destination management

Dimension	Traditional tourism destination management	Doughnut tourism destination targets	Sustainable tourism destination management
Value Premise	Economic growth, profit maximization, destinations as market commodities	Safe and just space for humanity, SDGs	Balancing economic, social, cultural, and environmental objectives for long-term sustainability
Economic Approach	Prioritizes short to mid-term revenue, overtourism driven by investor interests, pro-business policy	Regenerative and distributive economy	Seeks long-term economic benefits and support for local and regional development, pro-total welfare policy
Environmental Approach	Reactive environmental management, potential overuse of natural resources	Planetary boundaries, earth systems, global footprints	Circular economy, minimizing waste and environmental footprints, conservation, local ecological compensation/ biodiversity offsets
Social and Cultural Approach	Often commodifies culture without ensuring preservation, overlooking local community impacts	Equity, voice, transparency, accountability, universal human rights, justice	Promotes well-being and preservation of local communities and cultures, integrating traditions respectfully
Marketing Orientation	Focuses on short-term gains and mass marketing for immediate tourist attraction	Ecotourism, regenerative tourism, slow tourism	Long-term resilience and adaptability, sustainable value co-creation with wider destination ecosystem

Source: Authors' research

The left-hand column in Table 2 describes how traditional tourism destination management embraces growth, short-term decision-making, and incremental and reactive micro-level management. Macro-level controls for longer-term strategic planning and systemic thinking are lacking.

The middle column proposes that Doughnut tourism destination management gives instructions to consider the balance between the destination and earth systems. The economic approach in the Doughnut model describes a regenerative and distributive economy. On a local level, a question arises whether we can recognize a maximum economic scale to which

tourism can and should grow. New forms of regenerative and zero-growth economic models, as well as the equalization of income distribution, may be necessary to employ. The environmental approach of the Doughnut model is planetary. Contradictions and trade-offs between local and global environmental impacts can be a severely wicked problem to tackle.

The right-hand column highlights how the focus has evolved from short-term gains to embracing practices that promote environmental conservation, social equity, community, and cultural respect. The shift to sustainable tourism destination management recognizes the critical need to balance economic, social, cultural, and environmental objectives to ensure the long-term viability and resilience of tourism destinations. Adverse impacts associated with tourism are mitigated, and the benefits to local communities and the environment are enhanced. Local community needs, a balanced local economy, and well-being are adhered to. The growth targets of individual businesses are adjusted to support the wider needs of the local destination. This requires the adoption of systemic thinking to understand the complex interactions between tourism and the destination ecosystems and communities. The long-term impacts of tourism activities and informed decisions that consider local environmental limits and social foundations are required (Gössling, 2018).

Without a Doughnut approach, sustainable destination management can lead to *sub-optimization* on the tourism system level. This can occur if destinations have a will and ability to control local sustainability, but no one considers the inevitable negative spillovers back to global concerns, and vice versa. These negative spillovers include, for example, the environmental impacts of transportation, energy, construction, and food supply chains connected to the destination. They also include the extortion of workers in global supply chains. Bridging the gap between local tourism management and the safe and just space for humanity requires complex analysis to account for all relevant and controllable spillovers within the destination.

5. Conclusions

Drawing from Kate Raworth's Doughnut model (2017), we explore the paradigm shift to bridge the gap between global sustainability aims and tourism management at a local level. The Doughnut economy model illustrates a compelling pathway toward operationalizing sustainable tourism practices within a systemic framework. This paper continues from Hartman and Hesling (2023) by explicating how the Doughnut perspective on global sustainability is a step forward from small-minded sustainability management. In our version of the Doughnut, we highlighted the objective nature of the planetary boundaries which cannot be negotiated. We referred to international human rights as setting standards for the just space, including Indigenous rights at the destination and beyond. We also highlighted how digitalization can and should contribute to reaching the Doughnut goals and realizing the sustainability transformation.

We present two, interconnected conclusions as answers to our research questions:

1) Doughnut tourism destination management can impact socio-economic systems far beyond the destination and should address human rights, climate, biodiversity, and water footprints in global supply chains of goods and services used in tourism. At the same time, attention to global concerns only may seriously ignore and harm local sustainability. Consequently, two-way effects and processes should always be recognized, micro to macro and vice versa.
2) Digitalization and smart tourism can and should be used to enable knowledge-based decision-making for detecting and reconciling sustainability challenges and conflicts locally and in the larger system.

Thorough explorations of the local and global social and ecological impacts of tourism can provide invaluable insights into the broader sustainability discourse. The negative global externalities of tourism may in many cases be worse than the negative impacts at the destination, and conversely, local improvements to contribute to global benefits can lead to large negative local adverse effects. Future inquiries could delve deeper into the practicalities and challenges of downsizing global sustainability models like the Doughnut economy to regional or local scales in diverse geographical and cultural contexts. Additionally, empirical investigations are needed on the efficacy and impact of digital transformation initiatives, particularly in facilitating stakeholder engagement in sustainability goals and adaptive governance towards sociocultural and environmental sustainability.

Regulators and policy makers should aim for sustainability beyond destinations, although the sustainability of the whole tourism system includes wicked problems to govern. Setting effective restrictions and negative economic incentives against the socially and ecologically most harmful forms of tourism is a good start.

Continued dialogue among academia, industry stakeholders, policy makers and local communities, augmented by rigorous empirical research, will be instrumental in achieving sustainability goals in destination ecosystem and tourism system contexts.

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Conflict of interest

The authors declare no conflicts of interest.

References

1. *Amsterdam City Doughnut* (2020). Retrieved September 25, 2023 from https://doughnuteconomics.org/stories/amsterdam-city-doughnut
2. Bösehans, G., Bolderdijk, J. W., & Wan, J. (2020). Pay more, fly more? Examining the potential guilt-reducing and flight-encouraging effect of an integrated carbon offset. *Journal of Environmental Psychology*, *71*, 101469. https://doi.org/10.1016/j.jenvp.2020.101469
3. Buhalis, D., & Law, R. (2008). Twenty years on and 10 years after the Internet: The state of eTourism research. *Tourism Management*, *29*(4), 609–623. https://doi.org/10.1016/j.tourman.2008.01.005
4. Chen, T., Drennan, J., Andrews, L., & Hollebeek, L. D. (2018). User experience sharing: Understanding customer initiation of value co-creation in online communities. *European Journal of Marketing*, *52*(5/6), 1154–1184. https://doi.org/10.1108/EJM-05-2016-0298
5. Engeset, A. B., Løseth, K., & Urbaniak-Brekke, A. M. (2023). Sustainable futures of coastal and marine tourism "When the going gets tough, the tough gets going"? Resilience in coastal tourism in rural Norway. *Abstract presented at the 31st Nordic*

Symposium on Tourism and Hospitality Research. Retrieved September 26, 2023 from https://ltu.diva-portal.org/smash/get/diva2:1803529/FULLTEXT01.pdf

6. European Commission (2016). *The European Tourism Indicator System ETIS toolkit for sustainable destination management*. DocsRoom – European Commission (europa.eu).
7. Ferri, M. A., & Aiello, L. (2017). Tourism destination management in sustainability development perspective, the role of entrepreneurship and networking ability: Tourist Kit. *World Review of Entrepreneurship, Management and Sustainable Development*, *13*(5-6), 647–664. https://doi.org/10.1504/WREMSD.2017.086334
8. Frenzel, F., Giddy, J., & Frisch, T. (2022). Digital technology, tourism and geographies of inequality. *Tourism Geographies*, *24*(6-7), 923–933. https://doi.org/10.1080/14616688.2022.2142843
9. Fyall, A. & Garrod, B. (2020). Destination management: A perspective article. *Tourism Review*, *75*(1), 165–169. https://doi.org/10.1108/TR-07-2019-0311
10. Gelcich, S., Vargas, C., Carreras, M. J., Castilla, J. C., & Donlan, C. J. (2017) Achieving biodiversity benefits with offsets: Research gaps, challenges, and needs. *Ambio*, *46*(2), 184–189. https://doi.org/10.1007/s13280-016-0810-9
11. Gilbert, P. Wilson, P., Walsh, C., & Hodgson, P. (2017). The role of material efficiency to reduce CO2 emissions during ship manufacture: A life cycle approach. *Marine Policy*, *75*, 227–237. https://doi.org/10.1016/j.marpol.2016.04.003
12. Gössling, S. (2009). Carbon neutral destinations: a conceptual analysis. *Journal of Sustainable Tourism*, *17*(1), 17–37. https://doi.org/10.1080/09669580802276018
13. Gössling, S. (2018). Tourism, tourist learning and sustainability: An exploratory discussion of complexities, problems and opportunities. *Journal of Sustainable Tourism*, *26*(2), 292–306. https://doi.org/10.1080/09669582.2017.1349772
14. Gössling, S. (2021). Tourism, technology and ICT: A critical review of affordances and concessions. *Journal of Sustainable Tourism*, *29*(5), 733–750. https://doi.org/10.1080/09669582.2021.1873353
15. Gretzel, U., Werthner, H., Koo, C., & Lamsfus, C. (2015). Conceptual foundations for understanding smart tourism ecosystems. *Computers in Human Behavior*, *50*, 558–563. https://doi.org/10.1016/j.chb.2015.03.043
16. Grundner, L., & Neuhofer, B. (2021). The bright and dark sides of artificial intelligence: A futures perspective on tourist destination experiences. *Journal of Destination Marketing & Management*, *19*, 100511. https://doi.org/10.1016/j.jdmm.2020.100511
17. Guedes, W. P., Branchi, B. A., Sugahara, C. R., & Ferreira, D. H. L. (2024). Gender-based climate (in) justice: An overview. *Environmental Science & Policy*, *162*, 103934. https://doi.org/10.1016/j.envsci.2024.103934
18. Gutierriz, I., Ferreira, J. J., & Fernandes, P. O. (2022). Digital transformation and the new combinations in tourism: A systematic literature review. *Tourism and Hospitality Research, 1-20*. https://doi.org/10.1177/14673584231198414
19. Hartman, S., & Heslinga, J. H. (2022) The Doughnut destination: Applying Kate Raworth's Doughnut Economy perspective to rethink tourism destination management. *Journal of Tourism Futures*, *9*(2), 279–284. https://doi.org/10.1108/JTF-01-2022-0017
20. Hernández Sánchez, N., & Oskam, J. (2022). A "new tourism cycle" on the Canary Islands: scenarios for digital transformation and resilience of small and medium tourism enterprises. *Journal of Tourism Futures*, 1–17. https://doi.org/10.1108/JTF-04-2022-0132
21. International Labour Organization (ILO), Walk Free, and International Organization for Migration (IOM) (2022). *Global estimates of modern slavery forced labour and forced marriage. Geneva*. Retrieved March 19, 2024 from https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_norm/@ipec/documents/publication/wcms_854733.pdf

22. Ioannides, D.; Gyimóthy, S., & James, L. (2021). From liminal labor to decent work: A human-centered perspective on sustainable tourism employment. *Sustainability*, *13*, 851. https://doi.org/10.3390/su13020851
23. James, L., & Halkier, H. (2023). Change agency and path plasticity: Sustainability, cruise tourism and destination path development in Nuuk, Greenland. *Abstract presented at the 31st Nordic Symposium on Tourism and Hospitality Research*. Retrieved September 26, 2023 from https://ltu.diva-portal.org/smash/get/diva2:1803529/FULLTEXT01.pdf
24. Jamrozy, U. (2007). Marketing of tourism: A paradigm shift toward sustainability. *International Journal of Culture, Tourism and Hospitality Research*, *1*(2), 117–130. https://doi.org/10.1108/17506180710751669
25. Jenkins, I., & Schröder, R. (Eds.). (2013). *Sustainability in tourism: A multidisciplinary approach*. Springer Science & Business Media. http://dx.doi.org/10.1007/978-3-8349-7043-5
26. Kennedy, C. M., Fariss, B., Oaklead, J. R., Garnett, S. T., Fariss, B., Oakleaf, J. R., … & Kiesecker, J. (2023). Indigenous Peoples' lands are threatened by industrial development; Conversion risk assessment reveals need to support Indigenous stewardship. *One Earth*, *6*(8) 1032–1049. https://doi.org/10.1016/j.oneear.2023.07.006
27. Klarin, A., Park, E., Xiao, Q., & Kim, S. (2023). Time to transform the way we travel? A conceptual framework for slow tourism and travel research. *Tourism Management Perspectives*, 46, 101100. https://doi.org/10.1016/j.tmp.2023.101100
28. Klein, R. A. (2011). Responsible cruise tourism: Issues of cruise tourism and sustainability. J*ournal of Hospitality and Tourism Management*, *18*, 107–116. https://doi.org/10.1375/jhtm.18.1.107
29. Könnölä, K., Kangas, K., Seppälä, K. Mäkelä, M., & Lehtonen, T. (2020). Considering sustainability in cruise vessel design and construction based on existing sustainability certification systems. *Journal of Cleaner Production*, *259*, 120763. https://doi.org/10.1016/j.jclepro.2020.120763
30. Law, R., Buhalis, D., & Cobanoglu, C. (2014). Progress on information and communication technologies in hospitality and tourism. *International Journal of Contemporary Hospitality Management*, *26*(5), 727–750. https://doi.org/10.1108/IJCHM-08-2013-0367
31. Loureiro, A. (2019) Innovation and technology – the only answer for sustainable tourism growth. *Worldwide Hospitality and Tourism Themes*, *11*(6), 743–747. https://doi.org/10.1108/WHATT-09-2019-0055
32. Loureiro, S. M. C., & Nascimento, J. (2021). Shaping a view on the influence of technologies on sustainable tourism. *Sustainability*, *13*, 12691. https://doi.org/10.3390/su132212691
33. Mancini, M. S., Barioni, D., Danelutti, C., Barnias, A., Bračanov, V., Pisce, G. C., ... & Galli, A. (2022). Ecological footprint and tourism: Development and sustainability monitoring of ecotourism packages in Mediterranean protected areas. *Journal of Outdoor Recreation and Tourism*, *38*, 100513. https://doi.org/10.1016/j.jort.2022.100513
34. Miorandi, D., Sicari, S., De Pellegrini, F., & Chlamtac, I. (2012). Internet of things: Vision, applications and research challenges. *Ad Hoc Networks*, *10*(7), 1497–1516. https://doi.org/10.1016/j.adhoc.2012.02.016
35. Munro, S. A., Fraser, G. C. G., Snowball, J. D., & Pahlow, M. (2016) Water footprint assessment of citrus production in South Africa: A case study of the Lower Sundays River Valley. *Journal of Cleaner Production*, *135*, 668–678, https://doi.org/10.1016/j.jclepro.2016.06.142
36. Naranjo Barrantes, M. A., Rahn, A. K. K., Arets, E. J. M. M., van den Berg, J., & Berkhout, E. D. (2023). *Deforestation and forest degradation in coffee supply chains*. Wageningen Economic Research.

37. Neuhofer, B. (2016). Innovation through co-creation: Towards an understanding of technology-facilitated co-creation processes in tourism. *Open tourism: Open innovation, crowdsourcing and co-creation challenging the tourism industry* (pp. 17–33), Berlin: Springer-Verlag. https://doi.org/10.1007/978-3-642-54089-9_2
38. One Planet Sustainable Tourism Programme (2021). *Glasgow declaration: A commitment to a decade of climate action*. Retrieved April 1, 2024 from https://www.oneplanetnetwork.org/sites/default/files/2022-02/GlasgowDeclaration_EN_0.pdf
39. Pomering, A., Noble, G., & Johnson, L. W. (2011). Conceptualising a contemporary marketing mix for sustainable tourism. *Journal of Sustainable Tourism*, *19*(8), 953–969. https://doi.org/10.1080/09669582.2011.584625
40. Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, *18*(3), 5–14. https://doi.org/10.1002/dir.20015
41. Presenza, A., Micera, R., Splendiani, S., & Del Chiappa, G. (2014). Stakeholder e-involvement and participatory tourism planning: Analysis of an Italian case study. *International Journal of Knowledge-Based Development*, *5*(3), 311–328. https://doi.org/10.1504/IJKBD.2014.065320
42. Rahmadian, E., Feitosa, D. & Virantina, Y. (2023). Digital twins, big data governance, and sustainable tourism. *Ethics Information Technology*, *25*(61). https://doi.org/10.1007/s10676-023-09730-w
43. Raworth, K. (2012). *A safe and just space for humanity. Can we live within a Doughnut?* Oxfam discussion paper. Retrieved April 1, 2024 from https://www-cdn.oxfam.org/s3fs-public/file_attachments/dp-a-safe-and-just-space-for-humanity-130212-en_5.pdf
44. Raworth, K. (2017). *Doughnut economics: Seven ways to think like a 21st-century economist*. Chelsea Green Publishing.
45. Reinhold, S., Beritelli, P., & Laesser, C. (2023). The 2022 consensus on advances in destination management. *Journal of Destination Marketing & Management*, *29*, 100797. https://doi.org/10.1016/j.jdmm.2023.100797
46. Richardson, K., Steffen, W., Lucht, W., Bendtsen, J., Cornell, S. E., Donges, J. F., … & Rockström, J. (2023). Earth beyond six of nine planetary boundaries. *Science Advances*, *9*, 2458. https://doi.org/10.1126/sciadv.adh2458
47. Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., Lambin, E. F., ... & Foley, J. A. (2009). A safe operating space for humanity. *Nature*, *461*(7263), 472–475. https://doi.org/10.1038/461472a
48. Steffen, W., Richardson, K., Rockström, J., Cornell, S. E., Fetzer, I., Bennett, E. M., ... & Sörlin, S. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science*, *347*(6223), 1259855. https://doi.org/10.1126/science.1259855
49. *Sustainable Travel International*, n.d. Retrieved April 1, 2024 from https://sustainabletravel.org/issues/carbon-footprint-tourism/
50. Sveinsdottir, A. G., Ren, C., Olsen, J., Rastad Bjørst, L., Hovelsrud, G., Dannevig, H., ... & Løseth, K. (2023). Tourism governance in Svalbard and Greenland – A comparative approach towards adaptive tourism governance in a rapidly changing Arctic. *Abstract presented at the 31st Nordic Symposium on Tourism and Hospitality Research*. Retrieved September 26, 2023 from https://ltu.diva-portal.org/smash/get/diva2:1803529/FULLTEXT01.pdf
51. Szott, I. D., Pretorius, Y., & Koyama, N. F. (2019), Behavioural changes in African elephants in response to wildlife tourism. *Journal of Zoology*, *308*, 164–174. https://doi.org/10.1111/jzo.12661
52. Tola, F., Mosconi, E. M., Marconi, M., & Gianvincenzi, M. (2023). Perspectives for the development of a circular economy model to promote ship recycling practices in the

European context: A systemic literature review. *Sustainability*, *15*, 5919. https://doi.org/10.3390/su15075919

53. Turner, R. A., & Wills, J. (2022). Downscaling doughnut economics for sustainability governance. *Current Opinion in Environmental Sustainability*, *56*, 101180. https://doi.org/10.1016/j.cosust.2022.101180
54. United Nations General Assembly (2022a). *Resolution 76/300.* Resolution adopted by the General Assembly on 28 July 2022. The human right to a safe, healthy and sustainable environment. A/RES/76/300.
55. United Nations General Assembly (2022b). *Resolution 77/178.* Resolution adopted by the General Assembly on 14 December 2022. Promotion of sustainable and resilient tourism, including ecotourism, for poverty eradication and environmental protection. A/RES/77/178.
56. United Nations Human Rights Council (2021). *The human right to a clean, healthy and sustainable environment*. Resolution adopted by the Human Rights Council on 8 October 2021 A/HRC/RES/48/13.
57. United Nations World Tourism Organization (UNWTO 2004). *Indicators of sustainable development for tourism destinations: A guidebook*. https://doi.org/10.18111/9789284407262
58. Warnecke, T. (2023). Operationalizing the Doughnut economy: An institutional perspective. *Journal of Economic Issues*, *57*(2), 643–653. https://doi.org/10.1080/00213624.2023.2202570
59. WCED (World Commission on Environment and Development) (1987). *Our Common Future*. Oxford, UK and New York, USA: Oxford University Press.