

ORIGINAL RESEARCH ARTICLE

Are smart tourism destinations developing sustainably?

Larry Dwyer

Business School, University of Technology, Sydney, Sydney 2007, Australia; larry.dwyer@uts.edu.au

ABSTRACT

This paper attempts to clarify our understanding of the ability of smart tourism to underpin sustainable destination development and the theoretical and practical challenges that must be faced in this process. Several challenges must be overcome if smart tourism is to be associated with progress in achieving sustainable development at the destination level. One challenge involves formulating a clear and consistent conception of what sustainability entails. Another challenge is to reject the growth ethic that drives much of the research effort in smart tourism with its implicit assumption of the role played by technological progress in ‘decoupling’ environmental effects from tourism growth. A third challenge involves accounting for resident well-being and ‘quality of life’ issues that are essential elements of the sustainability concept. A further challenge is to integrate the ideas proposed in a way that progresses smart tourism research, providing guidance to researchers and destination managers wishing to take sustainability and well-being issues more seriously. The anticipated outcome is smart tourism development that is much more suitable to deliver valued economic, socio-cultural, and environmental outcomes to destinations locally and globally.

Keywords: smart tourism destination; sustainable development; resident well-being; information and communication technology

1. Introduction

Industrial development worldwide has resulted in the depletion of non-renewable natural resources and ecosystem degradation, with associated adverse environmental effects ranging over air, sea, and land. Serious concerns have been raised. Six of the nine planetary boundaries have now been transgressed, while pressure on the others continues alongside global economic growth^[1]. Despite the hopes of its advocates, economic growth has not improved living conditions for the majority of the earth’s population. The distribution of income has not improved, nor have unemployment or poverty been eliminated. As a major growth industry, tourism has done little to resolve adverse socio-cultural and environmental problems associated with its continued growth^[2].

The standard response of destination managers to this situation is to emphasize the material benefits of economic growth while invoking better management and the use of new technologies to reduce the adverse impacts^[2-5]. Technological advancements in information and communication technologies (ICT) are steadily transforming the entire travel, tourism, and hospitality industries. New technologies have assumed increased importance in determining the competitiveness of business operators and entire destinations. Firmly grounded in technology, ‘smart tourism’ refers to specific technologies that support this transformative process^[6,7].

ARTICLE INFO

Received: 29 October 2023 | Accepted: 16 November 2023 | Available online: 24 November 2023

CITATION

Dwyer L. Are smart tourism destinations developing sustainably? *Smart Tourism* 2023; 4(2): 2487. doi: 10.54517/st.v4i2.2487

COPYRIGHT

Copyright © 2023 by author(s). *Smart Tourism* is published by Asia Pacific Academy of Science Pte. Ltd. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), permitting distribution and reproduction in any medium, provided the original work is cited.

Derived from the smart city concept, a plethora of definitions of smart tourism have been proposed in the research literature. For present purposes, we follow the widely accepted view of smart tourism as that which is supported by integrated efforts at a destination to find innovative ways to collect and aggregate/harness data derived from physical infrastructure, social connections, government/organizational sources, and human bodies/minds in combination with the use of advanced technologies to transform that data into enhanced experiences and business value propositions with a clear focus on efficiency, sustainability, and enriched experiences during the trip^[6].

Smart tourism includes two essential elements: ‘smart technology’ and ‘smart destination’. The former comprises tools, products, and services anticipated to add value to a firm’s operations via improved connectivity, interaction, personalization, and co-creation of visitor experiences^[8,9]. Smart technologies implemented in the tourism sector include QR codes, online booking systems, sensors, tags, the Internet of Things (IoT), virtual reality, augmented reality, cloud computing, artificial intelligence, mobile connectedness, real-time synchronization, e-commerce, intelligent traffic, smart sightseeing, and smart forecasting systems^[10,11]. As a result of such applications, both business operations and customer experiences are being extensively transformed^[7].

In contrast, characteristics of a smart tourism destination include a technological base supported by innovation, investments in human and social capital, civic engagement, public participation in tourism planning and development processes consistent with sustainability principles, and enhanced resident well-being^[6,10].

Smart tourism’s association with sustainability is widely accepted in the research literature^[6,10–13]. An unresolved question, however, concerns the extent to which smart tourism helps destinations achieve the goal of sustainable development and the various linkages involved. While some researchers claim that the aim of smart tourism is to focus on and enhance sustainability^[6,10] others claim that a destination cannot be considered smart if it is not sustainable^[14]. Some researchers even make the very strong claim that smart tourism ‘guarantees’ sustainable tourism development^[13,15]. Assessment of these claims first requires consideration of the nature of sustainability. In much of the literature, the alleged links between tourism ‘smartness’ and ‘sustainability’ remain unanalyzed. It will be argued below that neither sustainable development nor the good quality of life outcomes for residents are ‘guaranteed’ by the application of smart technologies in tourism development. Indeed, within the smart tourism initiative, little attention has been given to how sustainability outcomes may be incorporated or achieved. An unfortunate feature of the smart tourism research effort is that, in general, it follows the wider tourism literature in its uncritical use of the label ‘sustainable’, typically applied to any development outcomes possessing some beneficial features. Unless a clear and consistent notion of ‘sustainability’ is formulated, claims that the smart tourism destination promotes ‘sustainability’ have little substance.

This paper attempts to clarify our understanding of the ability of smart tourism to underpin sustainable destination development and the theoretical and practical challenges that need to be met in this process. Analysis of this topic demands a clear understanding of the concepts of ‘smart tourism destination’ and ‘sustainable development’, as well as a sense of the interactions between the two. The paper first provides a perspective on the effects of smart tourism on key tourism stakeholders—business operators, tourists, destination residents, and destination managers. The potential positive effects identified are often cited by smart tourism researchers as evidence of the support given by smart tourism to achieve the goals of sustainable tourism development, but the nature of sustainable tourism largely remains unanalyzed in this body of literature. The paper then identifies several challenges that must be overcome if smart tourism is to be associated with progress in achieving sustainable development at the destination level.

One challenge involves formulating a clear and consistent conception of what sustainability entails. The smart tourism destination literature is characterized by a lack of clarity as to the nature of sustainable development and its implications for smart tourism research and policy agendas.

A second challenge is to re-examine the growth ethic that drives much of the research effort in smart tourism and its recommended policy prescriptions. Much of the smart tourism literature adopts the standard growth management approach to achieving sustainable development, relying on good management and new technologies to minimize adverse social and environmental impacts. At a time when the goal of economic growth is under increasing attack by critics inside and outside of tourism and the role of technological progress in ‘decoupling’ environmental effects from tourism growth is disputed, smart tourism research needs to re-assess its faith in technological solutions to resolve environmental problems. It is argued that smart tourism research can be informed by critical approaches to tourism development that serve as alternative models for tourism development.

A third challenge involves the development of smart tourism destinations while accounting for resident well-being and ‘quality of life’ issues that are essential elements of the sustainability concept. While claiming that smart tourism destinations can promote sustainable development and improve the quality of life for both residents and visitors, the smart tourism literature has yet to study in detail the potential contribution of smart destination development to resident well-being. An ongoing challenge for smart tourism destination development involves incorporating the role of well-being outcomes in the policy process.

A further challenge is to integrate the ideas proposed in a way that progresses smart tourism research and provides guidance to researchers and destination managers wishing to take sustainability and well-being issues more seriously. Applying a ‘dashboard’ of indicators of resident wellbeing in the form of a well-being lens allows destination managers to prioritize wellbeing outcomes so that specific policies might be designed to enhance them.

The anticipated outcome of adopting the ideas and strategies proposed in this paper is smart tourism development that is more people-centered and thus much more suitable to deliver valued economic, socio-cultural, and environmental outcomes locally and globally.

2. Smart tourism and sustainable development

2.1. Potential benefits of smart tourism

The potential benefits of smart tourism can be grouped according to the effects on four major groups of stakeholders. These potential benefits and some potential negative effects are listed in **Table 1**.

Table 1. Potential effects of smart tourism^[6,7,10,12,16–19].

Benefits to tourism businesses

Improves management/supervision processes; promotes innovation; increases operational efficiencies; decreases business costs; provides richer, more efficient, and more effective travel-related services; improves product quality generate increased sales; provides business creation opportunities; improves business competitiveness; improves understanding of visitor needs; facilitates new collaborative ventures; creates new way of managing tourist trends; introduces new and creative digital media, marketing, and communication technologies for more effective marketing outcomes; facilitates positive service encounter experiences.

Table 1. (Continued).

Benefits to tourists
Easier access to quality, customized information enabling co-creation of experiences; enables enriched, high-value, meaningful, memorable, and shared tourist experiences before, during, and after the trip; improves tourist mobility and social inclusion to interact more closely with local residents; greater ease in making online purchases; helps in planning itineraries and navigating destinations; promotes accessible development of tourist areas; improved visitor experiences via personalized information on travel-related services; benefits such as trust, attitude, and satisfaction gained through interactions on social networking sites. Negatives: emphasis on technology may impede truly meaningful tourism experiences; potential cognitive overload; many tourists lack the skills to apply ICT; experiences associated with ICT and augmented reality may be seen as inauthentic; smart tourism technologies can result in isolation, alienation, social disengagement, and self-estrangement (e-lienation, technostress), diminishing the restorative purpose of vacations; a digital divide can be created between visitors with and without access to ICT.
Benefits to residents
Improves resident well-being through greater economic contribution from the tourism industry; provides opportunities for increased household income and job creation in tourism and ICT; facilitates resident involvement in tourism planning and management; improved resident-tourist relationships through engagement on social media; contributes to the improvement of human capital through improved education and training; digital skills development and social interactions facilitating technological literacy, data analysis and interpretation, creativity and innovation, cultural intelligence, communication and interpersonal skills, business and financial acumen, leadership and management skills; continuous learning and adaptation; enables improved public services such as health care, education, administration, police, security; improves the mobility and accessibility of people in society; expands the range and variety of entertainment experiences available to residents; provides greater resident support for tourism development; supports the sharing economy; ICT provides important input into demand and supply forecasting models.
Benefits to destination
Increased destination image and destination competitiveness; new ways to manage tourist flows; tourism-related information and knowledge can be exchanged instantly; allows destination managers to work with visitors to jointly create experiences; strengthens destination loyalty; enhances destination adaptability and resilience via interactive connections between key stakeholders and the wider community; helps to optimize resource use, reduce waste, improve efficiencies in energy and water use, and lower carbon footprints; improved environmental management, preservation, and monitoring of protected conservation areas; data analytics used to monitor and evaluate the environmental impacts of tourism; protect natural resources; enhance biodiversity conservation; and support the SDGs; smart technologies can help destinations become more resilient and responsive to crises; aids renovation and construction of energy efficient buildings; provides smart security services to improve perceptions of public safety; improved social capital through forging of collaborative relationships with all stakeholders; promotes greater transparency in tourism governance; promotes public-private cooperation and efficient coordination between different authorities and public organizations; strengthens the role of tourism-related institutions such as destination marketing organizations; provides basis for holistic approaches towards destination management; efficiency improvements in the transport sector; promote valued behaviours among tourists; digitizing and preserving local cultural heritage. Negatives: technological progress may generate greater visitor numbers (over-tourism) with attendant socio-cultural and environmental degradation tourist flow in tourist destinations, fake news often associated with ICT, together with privacy concerns associated with shared data; can intensify gentrification processes; and increase the ‘commodification’ of cultural experiences.

The positive effects of smart tourism, as listed in **Table 1**, are often identified as evidence of the ability of smart tourism to provide an important basis or ‘strong pathway’ for sustainable development of the tourism industry^[19,20]. The research effort also reflects a conviction that smart tourism destination development contributes to each of the 17 United Nations sustainable development goals (SDGs)^[4]. However, the potential benefits identified in **Table 1** do not, in themselves, imply that smart tourism promotes sustainable destination development. While smart tourism can generate efficiencies in resource use, the extent to which it supports sustainable development is problematic. Technology-linked efficiency gains in themselves do not achieve sustainable destination development, and the resulting benefits are not always equitably distributed to tourism stakeholders. While it may be agreed that the principles of sustainable development can potentially guide the development of smart tourism destinations towards more sustainable outcomes^[7] this does not reflect the reality of tourism industry development at the present time^[21,22]. While some researchers see smart tourism as a cutting-edge strategy for achieving sustainable development^[14], the evidence does not support this. For each of the SDGs, the extent to which smart tourism progresses in its achievement is debatable^[7,23].

2.2. Sustainable development

According to the most widely accepted definition, ‘sustainable development’ refers to economic growth

that meets the needs and aspirations of current populations without compromising those of future generations^[24]. It is now widely accepted that the primary goal of sustainable development is to enhance human well-being^[25]. This implies that the ultimate goal of social policy, including smart tourism policy, should be to achieve human well-being, present and future^[26,27]. Industrial developments affect resident well-being through the depletion or creation of different types of capital stocks^[28–32]. Investment and resource exploitation choices made by the present generation will determine the quantity and quality of resources available to future generations of residents. By such means, changes in the quantity and quality of capital stocks act as a transmission mechanism for determining future resident well-being outcomes. For tourism development to be sustainable, the sum of the well-being outcomes of the future generation must be no less than the sum of the well-being outcomes of the present generation. Sustainability is thus seen to be essentially a dynamic concept involving the preservation or enhancement of the total stock of capital that maintains ‘well-being’ over time^[33–37]. Curiously, tourism researchers in general, including smart tourism, tend to apply a static conception of sustainability focused on the effects of tourism growth on the present generation. Smart tourism studies, purporting to address ‘sustainability’ issues, tend to focus on the current rather than potential future effects of smart development projects^[12,14]. To date, little effort has been made to analyze the links between resident well-being outcomes, intra- and intergenerationally, and capital stock changes associated with smart tourism development.

Four main types of capital assets may be distinguished, and their relevance to smart tourism identified^[34,35].

Economic (produced) capital includes machines and buildings, tools and equipment, transportation, and physical infrastructure owned by households, businesses, and governments. In smart tourism destination development, economic capital would include technology infrastructure, the world wide web, computerized reservation systems, Internet of Things (IoT) Cloud Computing, data mining, artificial neural networks, and end-user devices^[10–12]. Research is needed into the types of investments in new ICTs that should be prioritized given their potential contribution to resident well-being.

Human capital includes the knowledge, health status, skills, competencies, and attributes embodied in individuals associated with the ability to perform labour, innovate, create and employ new technologies to produce economic value, and support personal and social well-being^[34]. Two major bases of human capital as it affects smart tourism development are society’s health and education status. Human capital is a fundamental construct in the development of smart tourism, forming the basis for creating technical talent, building leadership, entrepreneurship, innovation, productivity improvement, and adaptation to new ICT essential for smart sustainable destination development^[14,19,38].

Social capital comprises the relationships between individuals (shared norms and culture, social ties and social networks) that facilitate trust and cooperation, relationships between institutions (including government and governance arrangements), and the relationships between individuals and institutions (civic engagement, educational system, cultural heritage, traditional knowledge, legal system). Social capital in the tourism industry includes networks, voluntary associations, joint ventures, strategic alliances, festivals, and events. The different types of social capital—bonding, bridging, and linking—can support smart tourism development as well as generate various benefits to residents individually and socially^[38–40].

Natural capital refers to the destination stock of renewable and non-renewable natural resources. It includes individual assets, such as minerals, energy resources, land, soil, water, air, flora, and fauna, as well as broader ecosystem systems that provide goods and services necessary for the economy, society, and ecological balance, essential to the biodiversity necessary for the health and survival of all species and the

health and survival of all living things^[41]. Natural capital has particular relevance to tourism as a visitor ‘pull’ factor while also being essential to other types of capital (economic, human, and social) that generate well-being now and into the future^[42]. Smart technology can underpin environmental resource management and environmental quality and protection management^[7,12].

With some exceptions^[13], smart tourism researchers generally have ignored the role of capital stocks in transmitting well-being across generations to achieve sustainable destination development^[31,33]. Relatedly, they have also neglected to examine the extent to which different types of capital stocks are substitutable for one another in achieving smart, sustainable development. Researchers in the wider social sciences continue to debate whether sustainable development requires the total stock of capital to be maintained, with substitution allowed between various types of capital, or whether some types of capital stocks contribute to well-being in a unique way that cannot be replicated by other types^[31,33,36]. To date, smart tourism research displays very little awareness of the relevance of this debate to destination sustainability^[31].

In the absence of studies that employ a theoretically acceptable concept of ‘sustainability’ as a dynamic concept incorporating resident well-being, little evidence exists that sustainability targets are being achieved in destinations claiming to be smart^[43,44]. If a destination cannot be truly smart without being sustainable, as many researchers affirm^[6,10] doubts must arise as to whether any destination globally truly is a ‘smart destination’.

3. Smart tourism and tourism growth management

The standard strategy to achieve sustainable destination development, adopted by numerous contributors to the smart tourism literature, is to promote more efficient management practices, underpinned by advances in technology, to enhance human well-being equitably distributed while reducing adverse environmental impacts. The hope is that the impacts of industrial development, particularly adverse environmental impacts, can be reversed through feasible technological solutions^[5]. Consistent with the green growth and inclusive growth movements associated with fulfilling the United Nations’ SDG 2030 agenda^[2–4,45], this ‘growth management’ approach underlies the majority of strategies to achieve sustainable destination development. Driven by an underlying assumption (‘faith’) regarding the ability of technology innovation and management to deliver sustainable destination outcomes, the same techno-optimism pervades the smart tourism research literature. New technologies are expected to reverse the social and environmental degradation associated with tourism destination growth^[38,46]. Indeed, much of the smart tourism literature is characterized by uncritical acceptance of the ability of new technologies to steer destinations along ‘a concrete pathway’ to sustainability^[47–50].

There are several reasons to eschew technical optimism, particularly regarding the feasibility of reversing the adverse environmental and ecological effects of tourism development. These reasons involve the IPAT identity, the difficulties of ‘decoupling’ environmental effects from the economic growth process, and so-called ‘rebound effects’.

3.1. The IPAT identity

A simple equation (the so-called ‘IPAT identity’) highlights the extent to which technological optimism underpins pro-growth management approaches, including the mainstream tourism industry view^[51]. The equation $I = P \cdot A \cdot T$ maintains that environmental impacts (I) on a destination are the product of population size (P), affluence (A), and technology (T). Since rising population and rising affluence generate greater consumption, environmental impacts will inevitably increase unless the rate of technological improvement is sufficient to counteract this. Globally, this has been estimated to require a productivity rate increase of at least

ten times what has historically been achieved^[52]. To date, smart tourism research has failed to quantify the extent of productivity gains in tourism sectors consequent upon the adoption of ICT.

3.2. Decoupling

The extent of productivity gains required to escape the implications of the IPAT identity is formidable. But an additional and likely insurmountable challenge now arises for advocates of growth management. Successful growth management requires ‘decoupling’, shifting production activity towards more resource-efficient production processes with fewer emissions^[52]. Only in this way will the global economy continue to grow while environmental impacts decline. Two forms of decoupling may be distinguished: absolute decoupling implies that the amount of resource use and/or environmental impact declines as the economy grows, while relative decoupling implies a gain in environmental efficiency—resource use still increases, but less rapidly than the rate of increase in GDP^[53].

It is faith in absolute decoupling that leads tourism researchers, in general, to advocate technology applications to solve various environmental problems^[53]. But, unfortunately for the smart tourism research effort, there is no evidence that absolute decoupling is occurring in any economy in the world^[52–54]. Absolute decoupling in any destination requires increases in resource productivity to be greater than the rate of economic growth. Given the biophysical limits to what can be achieved through technological innovation, growth models project that absolute decoupling cannot be achieved in any industry^[53]. While relative decoupling can occur in industries including tourism, the productivity gains experienced do not reduce the rate of emissions beyond the additional contribution to GDP. The upshot is that technology will not reduce overall material use or associated net emissions. Increasingly, critics of growth management approach to development now refer to the ‘fantasy’ of decoupling, calling into question the feasibility of technical solutions to reconcile continued economic growth with environmental limits^[53].

While the smart tourism effort formulates strategies to reduce material use and associated emissions via good management and technological innovation, the ‘fantasy’ of decoupling imposes a biophysical restriction on the extent to which environmental impacts can be reduced within a growing tourism industry^[55].

3.3. Rebound effects

Greater efficiencies in resource use typically reduce the price of the produced goods and services, inducing consumption and associated emissions that may exceed the initial reduction in emissions from a technological improvement. Thus, for example, efficiency improvements in the rental car sector or road traffic control systems may result in lower-priced automobile travel, generating increased demand for rental vehicles. Consequently, the overall use of fossil fuels may be even greater after the application of energy-saving technological improvements in this sector. Given such ‘rebound effects’, energy-efficient technological improvements are likely to be counter-productive. There is substantial evidence that, globally, rebound effects have either negated or at least diminished environmental gains resulting from technological change^[52,56].

The implications of the infeasibility of decoupling, together with rebound effects, are substantial and imply that the continuing emphasis of researchers on the role of smart technology in underpinning tourism growth and supporting sustainable development may be misplaced. While these issues are receiving attention in the wider environmental science literature, they are being ignored in the smart tourism literature, wherein technological optimism prevails. To the extent that smart tourism research fails to address the issues of decoupling and rebound effects, it becomes irrelevant to the wider debate regarding the role of technology in sustainable tourism development. Environmental impacts perceived by residents in smart tourism destinations^[13], may not match reality. Claims also that new technologies help to control environmental resources and reduce energy consumption^[12], that ‘sustainability-oriented’ eco-innovation can mitigate CO₂

emissions^[57] or that smart tourism is vital for environmental sustainability^[46] must be treated with caution and dissected for their relevance to either relative or absolute decoupling. The problems associated with the growth management approach require serious consideration of the potential for embedding smart tourism research within heterodox alternative approaches including degrowth^[55,58]. We return to this point below.

4. The importance of resident well-being

It is well established in the social science literature that resident well-being is the ultimate goal of a sustainable tourism destination^[25–28]. However, while well-being is mentioned as a desirable outcome of smart tourism development, with just some exceptions^[13] the well-being literature with its established concepts and frameworks for analysis is typically ignored. Consequently, little effort has been made to analyze the well-being concept in any detail, identify relevant well-being indicators, or study the links between smart tourism destinations and resident well-being. In the smart tourism research literature, technological progress is implicitly assumed to generate positive resident well-being. A recently published thematic focus on smart tourism research effects fails to include well-being or quality of life issues^[50,59].

Sources of well-being

Human well-being is a multidimensional concept relating to the standard of living, health status, capabilities, opportunities, social relationships, and meaning or purpose in life^[60–63]. To estimate human well-being, researchers have developed a wide range of indicators identifying what matters to people, covering different dimensions of their needs^[26]. In recent years, several frameworks have been developed to capture the nature of human well-being, its different dimensions, and its sources. Prominent examples include the Better Life Initiative^[64], Planet Happiness^[65], the Happiness Alliance Agenda^[66], and Gross National Happiness^[67].

Various sources of well-being have been identified in the literature, comprising a mix of subjective and objective factors^[64,68–70]. Subjective well-being is taken to comprise three elements: life evaluation. Hedonism and eudaimonia, a sense of meaning and purpose in life, are complex elements with several interactive components^[71]. The most appropriate measure to be employed in an empirical study will depend on the context. Objective sources of well-being include material living standards (income, consumption, wealth, and adequate shelter), together with quality of life variables such as equitable distribution of income and wealth, good physical and mental health, sufficient nutrition, education, work-life balance, workplace characteristics, social relationships, opportunities for civic engagement, community vitality, physical and financial security, and good environmental quality^[64,65].

With some exceptions^[28–31,72–74] mainstream tourism research has tended to emphasize subjective well-being, with a focus on the perceptions and attitudes of tourists and residents toward tourism development. A recent study, focusing on the resident well-being outcomes of smart tourism development, emphasizes subjective life satisfaction and experiential measures, concluding that ICT increases the quality of life of residents in smart tourism destinations^[13]. Indeed, the majority of studies focus on the role of smart technologies in enhancing subjective tourist experiences^[48], with many emphasizing the importance of tourist satisfaction as an enabler of destination sustainability^[16]. While tourist satisfaction may lead to repeat visitation or favourable word of mouth, it remains unclear how tourist well-being (well-being experienced by ‘outsiders’) contributes to sustainable destination development. As argued above, it is resident well-being transmitted through changing capital stocks that determines if a destination is traversing a path of sustainable development. The links between tourist satisfaction, resident well-being, and destination sustainable development have yet to be explored in detail in the smart tourism literature.

There is a growing concern that a focus on subjective variables provides, at best, only partial information

concerning well-being [75]. The use of subjective well-being measures risks insufficient attention being given to the structural causes of well-being, limiting their policy relevance. A focus on subjective well-being is thus likely to ignore conditions that affect the sustainability of well-being outcomes in the development of smart tourism destinations. Individuals are often poor judges of their own future well-being. They also tend to accord future well-being outcomes a low weight in decision-making compared to current well-being.

Each element of subjective well-being has different drivers and consequences, implying that no single measure can adequately replace the others in a listing of enabling conditions for tourism development that enhances resident well-being^[34,62]. Despite an emphasis on subjective well-being measures, smart tourism research has neglected to explore the relevance of the different elements of the subjective measures to overall resident well-being.

A narrow focus on subjective well-being measures has acted as a barrier to the development of a holistic theoretical model to inform policy-making regarding smart tourism development^[13].

Determining the sustainability of alternative development paths for policy purposes requires that smart tourism researchers go beyond subjective estimates of resident well-being outcomes. A mix of objective and subjective measures is required to capture the full range of resident well-being outcomes associated with smart destination sustainable development^[26,34,62]. Whatever the particular well-being framework employed, a broad dashboard of well-being indicators, based on a mix of subjective and objective sources of well-being, provides a sounder basis for the design and appraisal of smart tourism development policies than a focus on a narrow source of well-being.

Across the social sciences, researchers are progressively moving towards the development of internationally comparable measures of subjective and objective well-being to better understand people's lives at the individual, household, and community levels^[76]. Perhaps the most prominent mixed framework is the Better Life Index^[22,34,64]. This framework recognizes the importance of both subjective and objective dimensions of well-being, also distinguishing between the drivers of current and future well-being, thus embedding sustainability considerations into the well-being framework. Sustainability is measured using indicators associated with four different types of capital—economic, human, social, and natural, providing the opportunity to enrich policy discussion by estimating resident well-being outcomes associated with alternative development paths^[35]. The framework is flexible enough to include both 'generic' indicators common to different destinations and 'contextual' indicators formulated for different destinations and development contexts. The framework has been employed in several tourism studies^[29–32,74] but has yet to be applied in smart tourism research.

5. Challenges for future development of smart tourism destinations

The above discussion implies that smart tourism development should become more people-centered in the use of technology to achieve sustainable development. Specific implications include the need to take heterodox approaches to tourism development more seriously, including the degrowth alternative, and the need for a 'lens' to convert impact measures into well-being outcomes.

5.1. Need to take heterodox approaches more seriously

All industry development must confront the failure of decoupling to successfully delink emissions from economic growth. In response, an increasing number of tourism researchers now argue that greater attention should be given to the development of types of tourism that eschew ongoing economic growth as a sustainable development pathway. A range of so-called 'heterodox' approaches to tourism development is skeptical of the potential for technological change to reverse growth-induced environmental and social degradation^[77].

Prominent among the heterodox approaches is ‘regenerative tourism’^[78,79]. Characteristic features of a regenerative approach to tourism development include the elimination of overconsumption, support for long-term perspectives in decision-making, a fundamental shift in the values of all destination stakeholders, emphasis on the wellbeing of all living things, and a sense of stewardship, caring, respect, and equity, enabling the renewal and flourishing of social and ecological systems. An increasing number of scholars now argue that ‘regenerative tourism’ should replace the concept of ‘sustainable tourism’^[79]. Clearly, these ideas have relevance for smart tourism research, but their implications for smart tourism destination development have been neglected to date. The smart tourism research effort, in its quest to identify the enabling conditions for achieving sustainable tourism development, needs to address criticisms of the growth management approach to sustainable tourism development.

5.2. The degrowth approach

Within the broader heterodox approach critical of the direction of mainstream tourism research, an increasing number of tourism researchers now argue that ‘tourism degrowth’ offers an important and valid alternative to growth management for destination development strategies^[77,80–82]. The degrowth solution to the decoupling challenge is to reduce global economic activity by downsizing associated material and energy flows, consistent with planetary boundaries^[1,54–56,58]. In this approach, strategies to increase efficiency in production must be complemented by the pursuit of sufficiency, which is ‘the direct downscaling of economic production in many sectors and a parallel reduction of consumption’^[52]. Given the undoubtable relevance of the degrowth movement to smart tourism destination development and its quest for sustainability, it is surprising that only one paper explicitly addressing degrowth has appeared in the smart tourism literature^[58].

5.3. Need for a well-being lens

An ongoing challenge for smart tourism destination development concerns the use of resident well-being measures to inform tourism policy formulation, implementation, and assessment. For this purpose, a well-being lens can be used by destination managers and policymakers^[22,29,30]. Comprising a broad multidimensional indicator set, based on a credible well-being framework, a well-being lens can act as a ‘filter’ or ‘prism’ to convert economic, social, and environmental impacts of smart tourism development to well-being outcomes^[26,76]. The proposed well-being lens can reveal the well-being outcomes of alternative development paths (including degrowth), identifying policies that enhance or diminish social well-being. In this approach, well-being outcomes do not merely complement key performance indicators but instead form the ultimate assessment criteria for estimating the level of progress associated with smart tourism development. Constructing the well-being lens through a public participatory process is crucial to identifying resident well-being priorities, and ensuring resident support for smart tourism assessment criteria^[26,34]. The well-being lens can also help to forge stronger links across public agencies and between public, private, and civil society actors in strategizing to enhance resident well-being in smart destination development.

Each of the established well-being frameworks comprises indicators developed to measure the resident well-being outcomes associated with destination development^[34,64]. These well-being measures have been employed in several publications relating to tourism and well-being^[22,28,29,74] and are equally relevant to smart tourism development. The composition of the well-being lens can be refined over time as improved measures are developed and as smart destination policymakers agree on indicators that can better capture conditions affecting residents current and future well-being.

6. Conclusions

Does smart tourism foster sustainable destination development? On the basis of the discussion above, the

answer must be ‘no, not even close’. Unless certain challenges are overcome, smart tourism will continue to fail to promote sustainable destination development.

Four major challenges were identified that have been relatively neglected in the sustainable development and smart tourism literature. One challenge relates to the lack of a clear concept of sustainable destination development. A large number of references to ‘sustainability’ in the smart tourism research literature, provide no clear definition of this concept and convey no clear understanding that sustainability is an essentially dynamic concept achieved by preserving or enhancing capital stocks that maintain ‘wellbeing’ in the present and over time. Consequently, the role of changing capital stocks in determining the sustainability of alternative paths for smart destination development is under-researched.

A second challenge involves a re-examination of the growth ethic that drives much of the research effort in smart tourism. Much of the smart tourism literature adopts the standard growth management approach to achieving sustainable development. Given that the role of technological progress in ‘decoupling’ environmental effects from tourism growth is hotly disputed in the wider research literature, smart tourism research needs to re-assess its faith in technological solutions to resolve environmental problems. If decoupling is indeed the myth that many critics believe it to be, the techno-optimism associated with much of the smart tourism research effort is undermined. At the very least, case studies should be undertaken to assess the limits to decoupling that may exist in smart tourism activity. Smart tourism destinations could also usefully explore alternatives to the standard growth management approach.

A third challenge for smart tourism research involves formulating measures of resident well-being suitable for analysis and policy-making to achieve sustainable tourism development. As argued, the smart tourism literature has yet to study in any detail the potential contribution of smart destination development to resident well-being. Where such issues have been addressed, narrow subjective well-being measures have been employed^[13], ignoring frameworks that comprise an appropriate mix of objective and subjective well-being measures required to capture those broader aspects of resident well-being relevant to smart destination sustainable development. It must also be noted that many studies of well-being and quality of life issues in smart tourism focus on tourists rather than residents of destinations, ignoring crucial questions regarding how the well-being of visitors (outsiders), can be accounted for within the dynamic conception of destination sustainability as identified above.

A further challenge for smart tourism research is to integrate the ideas proposed in a way that progresses smart tourism research and provides guidance to researchers and destination managers wishing to take sustainability and well-being issues more seriously. The current focus on smart destinations is obsessed with technological capability and tourism development, with too little effort on envisioning what values smart tourism needs to incorporate into its development and applications^[17]. This paper has argued that applying a ‘dashboard’ measure of resident well-being in the form of a well-being lens enables decision-makers to prioritize well-being outcomes so that specific smart tourism policies might be designed to target them.

It was argued that smart destination development can be informed by heterodox criticisms of mainstream tourism to make it much more people-centered regarding the types of new technology produced and applied. An emerging topic in smart tourism research has involved the development of a ‘wise’, ‘utopian’, or ‘smart tourism mindset’ contrasting with the techno-centrism that characterizes the smart tourism agenda^[17,18]. The values espoused to guide this extended vision for the smart tourism destination include those commonly advanced in the heterodox tourism literature generally, such as caring, sharing, responsibility, stewardship, accessibility, sustainability, social inclusion, participatory and just governance, and an emphasis on resident quality of life and wellbeing. Additional theoretical and empirical research is needed to develop the ‘wise’ or

‘utopian’ smart tourism mindset, acknowledging resident holistic wellbeing as a core concept^[17,18]. If, as expected, the development of smart tourism destinations will radically alter the tourism industry over the longer term, the industry must prepare for this to ensure that the transition is socially beneficial. This is another reason why the policy focus needs to be on resident well-being.

While several of the issues discussed in this paper differ from those discussed by smart researchers to date, they are essential for an understanding of the directions that future smart tourism research must take if it is to relate to social betterment and not just technological progress. Space limitations have precluded consideration of other issues important for smart tourism development. Instead, the paper has focused on several topics that have been relatively neglected in smart tourism research to date. The ideas and strategies proposed in this paper point to smart tourism development that is more people-centered, less techno-centric, and more suitable to deliver valued economic, socio-cultural, and environmental outcomes locally and globally. The formulation of policies best suited to implement wellbeing-enhancing smart tourism initiatives requires more theoretical and empirical research to determine appropriate directions for smart tourism research, necessary institutional changes, and participatory governance arrangements that best support the development of smart tourism to enhance resident well-being.

Conflict of interest

The author declares no conflict of interest.

Notes

This paper is based on a keynote address delivered by the author at the Global Tourism Conference 2023: Smart Tourism and Sustainability: Are we there yet? Held at Universiti Malaysia Terengganu, September 2023.

References

1. Steffen W, Richardson K, Rockström J, et al. Planetary boundaries: Guiding human development on a changing planet. *Science* 2015; 347(6223). doi: 10.1126/science.1259855
2. UNEP. Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication; United Nations Environmental Program: Nairobi, Kenya, 2011.
3. OECD. What is green growth and how can it help deliver sustainable development? Available online: <https://www.oecd.org/greengrowth/whatisgreengrowthandhowcanithelpdeliversustainabledevelopment.htm> (accessed on 22 November 2023).
4. UNWTO. Tourism and the sustainable development goals: Journey to 2030. Available online: <https://www.e-unwto.org/doi/pdf/10.18111/9789284419401> (accessed on 23 November 2023).
5. Edgell DL. *Managing Sustainable Tourism: A Legacy for The Future*, 3rd ed. Routledge; 2020.
6. Gretzel U, Sigala M, Xiang Z, et al. Smart tourism: foundations and developments. *Electronic Markets* 2015; 25(3): 179–188. doi: 10.1007/s12525-015-0196-8
7. El Archi Y, Benbba B, Nizamatinova Z, et al. Systematic literature review analysing smart tourism destinations in context of sustainable development: Current applications and future directions. *Sustainability* 2023; 15(6): 5086. doi: 10.3390/su15065086
8. Femenia-Serra F, Neuhofer B, Ivars-Baidal JA. Towards a conceptualisation of smart tourists and their role within the smart destination scenario. *The Service Industries Journal* 2018; 39(2): 109–133. doi: 10.1080/02642069.2018.1508458
9. Femenia-Serra F, Ivars-Baidal JA. Smart tourism: Implications for the management of cities and tourist destinations (Spanish). In: *Intelligent and Sustainable Management of Cities: Governance, Smart cities and Tourism*. Tirant Lo Blanch; 2018. pp. 129–151.
10. Gretzel U, Reino S, Kopera S, Koo C. Smart tourism challenges. *Journal of Tourism* 2015; 16(1): 41–47.
11. Buhalis D, Amaranggana A. Smart tourism destinations enhancing tourism experience through personalisation of services. In: *Information and Communication Technologies in Tourism*. Springer; 2015. pp. 377–389.
12. Cavalheiro MB, Joia LA, Cavalheiro GMC. Towards a smart tourism destination development model: Promoting environmental, economic, socio-cultural and political values. *Tourism Planning & Development* 2019; 17(3): 237–259. doi: 10.1080/21568316.2019.1597763

13. Santos-Júnior A, Almeida-García F, Morgado P, et al. Residents' quality of life in smart tourism destinations: A theoretical approach. *Sustainability* 2020; 12(20): 8445. doi: 10.3390/su12208445
14. González-Reverté F. Building sustainable smart destinations: An approach based on the development of Spanish smart tourism plans. *Sustainability* 2019; 11(23): 6874. doi: 10.3390/su11236874
15. de Avila AL, García S. Smart tourist destinations (Spanish). *Economía Industrial* 2015; 395: 61–69.
16. de Avila Munoz AL, Sánchez SG. Smart destinations (Spanish). *Harvard Deusto Business Review* 2013; 224: 58–67.
17. Gretzel U. Conceptualizing the smart tourism mindset: Fostering utopian thinking in smart tourism development. *Journal of Smart Tourism* 2021; 1(1): 3–8.
18. Coca-Stefaniak JA. Beyond smart tourism cities – towards a new generation of “wise” tourism destinations. *Journal of Tourism Futures* 2020; 7(2): 251–258. doi: 10.1108/jtf-11-2019-0130
19. Ivars-Baidal JA, Vera-Rebollo JF, Perles-Ribes J, et al. Sustainable tourism indicators: What's new within the smart city/destination approach? *Journal of Sustainable Tourism* 2021; 31(7): 1556–1582. doi: 10.1080/09669582.2021.1876075
20. Ribes JFP, Baidal JI. Smart sustainability: A new perspective in the sustainable tourism debate. *Investigaciones Regionales-Journal of Regional Research* 2018; 42: 151–170.
21. Dwyer L. Saluting while the ship sinks: The necessity for tourism paradigm change. *Journal of Sustainable Tourism* 2017; 26(1): 29–48. doi: 10.1080/09669582.2017.1308372
22. Dwyer L. Tourism development and sustainable well-being: A beyond GDP perspective. *Journal of Sustainable Tourism* 2020; 28: 1–18.
23. O'Connor P. Small- and medium-sized tourism enterprises and smart tourism: Tourism agenda 2030 perspective article. *Tourism Review* 2023; 78(2): 339–343. doi: 10.1108/tr-09-2022-0431
24. Brundtland GH. *Our Common Future: The World Commission on Environment and Development*. Oxford University Press; 1987.
25. Dalziel P, Saunders C, Saunders J. *Wellbeing Economics*. Springer International Publishing; 2018. doi: 10.1007/978-3-319-93194-4
26. Durand M. What should be the goal of public policies? *Behavioural Public Policy* 2020; 4(2): 226–235. doi: 10.1017/bpp.2019.45
27. Frijters P, Clark AE, Krekel C, et al. A happy choice: Wellbeing as the goal of government. *Behavioural Public Policy*.2020; 4(2): 126–165. doi: 10.1017/bpp.2019.39
28. Hirvilammi T, Helne T. Changing paradigms: A sketch for sustainable wellbeing and ecosocial policy. *Sustainability* 2014; 6(4): 2160–2175. doi: 10.3390/su6042160
29. Dwyer L. Destination competitiveness and resident well-being. *Tourism Management Perspectives* 2022; 43: 100996. doi: 10.1016/j.tmp.2022.100996
30. Dwyer L. Tourism contribution to the SDGs: Applying a well-being lens. *European Journal of Tourism Research* 2022; 32: 3212. doi: 10.54055/ejtr.v32i.2500
31. Dwyer L. Why tourism economists should treat resident well-being more seriously. *Tourism Economics* 2022; 29(8): 1975–1994. doi: 10.1177/13548166221128081
32. Dwyer L. Tourism development to enhance resident well-being: A strong sustainability perspective. *Sustainability* 2023; 15(4): 3321. doi: 10.3390/su15043321
33. Arrow KJ, Dasgupta P, Goulder LH, et al. Sustainability and the measurement of wealth. *Environment and Development Economics* 2012; 17(3): 317–353. doi: 10.1017/s1355770x12000137
34. Stiglitz JE, Fitoussi JP, Durand M. *Beyond GDP: Measuring what Counts for Economic and Social Performance*. OECD Publishing; 2018. doi: 10.1787/9789264307292-en
35. Dwyer L. Resident well-being and sustainable tourism development: The ‘capitals approach.’ *Journal of Sustainable Tourism* 2021; 31(9): 2119–2135. doi: 10.1080/09669582.2021.1990304
36. Dasgupta P. Measuring sustainable development: Theory and application. *Asian Development Review* 2007; 24(01): 1–10. doi: 10.1142/s0116110507000012
37. Barbier E, Burgess J. Natural resource economics, planetary boundaries and strong sustainability. *Sustainability* 2017; 9(10): 1858. doi: 10.3390/su9101858
38. Savić J, Pavlović G. Analysis of factors of smart tourism development in Serbia. *Menadžment u hotelijerstvu i turizmu* 2018; 6(1): 81–91. doi: 10.5937/menhottur1801081s
39. Moscardo G, Kononov E, Murphy L, et al. Linking tourism to social capital in destination communities. *Journal of Destination Marketing & Management* 2017; 6(4): 286–295. doi: 10.1016/j.jdmm.2017.10.001
40. Algan Y. Trust and social capital. In: Stiglitz JE, Fitoussi JP, Durand M (editors). *For Good Measure: Advancing Research on Well-being Metrics beyond GDP*. OECD Publishing; 2018. pp. 285–322. doi: 10.1787/9789264307278-12-en
41. Costanza R, Erickson JD, Farley J, et al. *Sustainable Wellbeing Futures: A Research and Action Agenda for Ecological Economics*. Edward Elgar Publishing; 2020. doi: 10.4337/9781789900958

42. De Neve JE, Sachs J. Sustainable development and human well-being. In: *World Happiness Report 2020*. Sustainable Development Solutions Network; 2020.
43. Yigitcanlar T, Kamruzzaman Md. Does smart city policy lead to sustainability of cities? *Land Use Policy* 2018; 73: 49–58. doi: 10.1016/j.landusepol.2018.01.034
44. Costanza R, Fioramonti L, Kubiszewski I. The UN Sustainable Development Goals and the dynamics of well-being. *Frontiers in Ecology and the Environment* 2016; 14(2): 59–59. doi: 10.1002/fee.1231
45. United Nations. *Transforming Our World: the 2030 Agenda for Sustainable Development*. United Nations; 2015.
46. Shafiee S, Rajabzadeh Ghatari A, Hasanzadeh A, et al. Developing a model for sustainable smart tourism destinations: A systematic review. *Tourism Management Perspectives* 2019; 31: 287–300. doi: 10.1016/j.tmp.2019.06.002
47. Yigitcanlar T. Smart city, knowledge city, sustainable city-the brand soup of contemporary cities. *International Journal of Knowledge-Based Development* 2018; 9(1): 1–5.
48. Wan CKB, Onuike AJ. Illuminating opportunities for smart tourism innovation that foster sustainable tourist well-being using Q methodology. *Sustainability* 2021; 13(14): 7929. doi: 10.3390/su13147929
49. Yalçinkaya P, Atay L, Korkmaz H. An evaluation on smart tourism. *China-USA Business Review* 2018; 17(6): 308–315.
50. Ye BH, Ye H, Law R. Systematic review of smart tourism research. *Sustainability* 2020; 12(8): 3401. doi: 10.3390/su12083401
51. Holdren JP, Ehrlich PR. Human population and the global environment: Population growth, rising per capita material consumption, and disruptive technologies have made civilization a global ecological force. *American Scientist* 1974; 62: 282–292.
52. Parrique T, Barth J, Briens F, et al. *Decoupling Debunked. Evidence and Arguments Against Green Growth as a Sole Strategy for Sustainability*. European Environment Bureau EEB; 2019.
53. Fletcher R, Rammelt C. Decoupling: A key fantasy of the post-2015 Sustainable Development Agenda. *Globalizations* 2016; 14(3): 450–467. doi: 10.1080/14747731.2016.1263077
54. Hickel J, Kallis G. Is green growth possible? *New Political Economy* 2019; 25(4): 469–486. doi: 10.1080/13563467.2019.1598964
55. Kallis G, Kerschner C, Martinez-Alier J. The economics of degrowth. *Ecological Economics* 2012; 84: 172–180. doi: 10.1016/j.ecolecon.2012.08.017
56. Brockway PE, Sorrell S, Semieniuk G, et al. Energy efficiency and economy-wide rebound effects: A review of the evidence and its implications. *Renewable and Sustainable Energy Reviews* 2021; 141: 110781. doi: 10.1016/j.rser.2021.110781
57. Chau KY, Lin CH, Tufail B, et al. Impact of eco-innovation and sustainable tourism growth on the environmental degradation: The case of China. *Economic Research-Ekonomska Istraživanja* 2023; 36(3). doi: 10.1080/1331677x.2022.2150258
58. March H. The smart city and other ICT-led techno-imaginaries: Any room for dialogue with Degrowth? *Journal of Cleaner Production* 2018; 197: 1694–1703. doi: 10.1016/j.jclepro.2016.09.154
59. Mehraliyev F, Chan ICC, Choi Y, et al. A state-of-the-art review of smart tourism research. *Journal of Travel & Tourism Marketing* 2020; 37(1): 78–91. doi: 10.1080/10548408.2020.1712309
60. Dodge R, Daly A, Huyton J, et al. The challenge of defining wellbeing. *International Journal of Wellbeing* 2012; 2(3): 222–235. doi: 10.5502/ijw.v2i3.4
61. Adler A, Seligman MEP. Using wellbeing for public policy: Theory, measurement, and recommendations. *International Journal of Wellbeing* 2016; 6(1): 1–35. doi: 10.5502/ijw.v6i1.429
62. Tov W. Well-being concepts and components. In: Diener E, Oishi S, Tay L (editors). *Handbook of Subjective Well-being*. Noba Scholar; 2018. pp. 1–15.
63. Smith MK, Diekmann A. Tourism and wellbeing. *Annals of Tourism Research* 2017; 66: 1–13. doi: 10.1016/j.annals.2017.05.006
64. OECD. *How's Life? Measuring Well-Being*. OECD Publishing; 2020.
65. Musikanski L, Cloutier S, Bejarano E, et al. Happiness index methodology. *Journal of Social Change* 2017; 9(1). doi: 10.5590/josc.2017.09.1.02
66. Helliwell JF, Layard R, Sachs JD. *The Happiness Agenda: The Next 10 Years*. Sustainable Development Solutions Network; 2023.
67. Lepeley MT. Bhutan's gross national happiness: An approach to human centred sustainable development. *South Asian Journal of Human Resources Management* 2017; 4(2): 174–184. doi: 10.1177/2322093717731634
68. Fuchs D, Schlipphak B, Treib O, et al. Which way forward in measuring the quality of life? A critical analysis of sustainability and well-being indicator sets. *Global Environmental Politics* 2020; 20(2): 12–36.
69. Nikolova M, Graham C. The economics of happiness. In: *Handbook of Labor, Human Resources and Population Economics*. Springer International Publishing; 2021; pp. 1–33.
70. Diener E, Oishi S, Tay L. Advances in subjective well-being research. *Nature Human Behaviour* 2018; 2(4): 253–

260. doi: 10.1038/s41562-018-0307-6
71. Stone A, Krueger AB. Understanding subjective well-being in Stiglitz. In: Fitoussi J-P, Durand M (editors). *For Good Measure: Advancing Research on Well-Being Metrics beyond GDP*. OECD Publishing; 2018. pp. 163–202.
 72. Berbekova A, Uysal M, Assaf AG. Toward an assessment of quality of life indicators as measures of destination performance. *Journal of Travel Research* 2021; 61(6): 1424–1436. doi: 10.1177/00472875211026755
 73. Dwyer L. Sustainable development of tourism: Research and policy challenges. *Highlights of Sustainability* 2023; 2(2): 83–99. doi: 10.54175/hsustain2020008
 74. Dwyer L. Productivity, destination performance, and stakeholder well-being. *Tourism and Hospitality* 2022; 3(3): 618–633. doi: 10.3390/tourhosp3030038
 75. Austin A. On well-being and public policy: Are we capable of questioning the hegemony of happiness? *Social Indicators Research* 2015; 127(1): 123–138. doi: 10.1007/s11205-015-0955-0
 76. Durand M, Exton C. Adopting a well-being approach in central government: Policy mechanisms and practical tools. Available online: https://s3.amazonaws.com/ghwbpr-2019/UAE/GH19_Ch8.pdf (accessed on 23 November 2023).
 77. Dwyer L. Tourism degrowth: Painful but necessary. *Sustainability* 2023; 15(20): 14676. doi: 10.3390/su152014676
 78. Sheldon PJ. The coming-of-age of tourism: Embracing new economic models. *Journal of Tourism Futures* 2021; 8(2): 200–207. doi: 10.1108/jtf-03-2021-0057
 79. Tham A, Sharma B. Regenerative tourism: Opportunities and challenges. *Journal of Responsible Tourism Management* 2023; 3: 15–23.
 80. HALL CM. Degrowing tourism: Décroissance, sustainable consumption and steady-state tourism. *Anatolia* 2009; 20(1): 46–61. doi: 10.1080/13032917.2009.10518894
 81. Higgins-Desbiolles F, Carnicelli S, Krolkowski C, et al. Degrowing tourism: Rethinking tourism. *Journal of Sustainable Tourism* 2019; 27(12): 1926–1944. doi: 10.1080/09669582.2019.1601732
 82. Fletcher R, Murray Mas I, Blanco-Romero A, et al. Tourism and degrowth: An emerging agenda for research and praxis. *Journal of Sustainable Tourism* 2019; 27(12): 1745–1763. doi: 10.1080/09669582.2019.1679822